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MARCH-APRIL, 1943

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Dedicated, Fort Riley, Kansas, August 29

THE 26th CAVALRY, under the gallant leadership of Colonel Clinton A. Pierce, actively participated in the first major encounter of American forces in the present war. All through Luzon, the officers and men distinguished themselves to the highest honor. . . . The spirit of coöperation and the devotion to duty inherent in the 26th Cavalry represents the spirit of the whole Filipino people. It has taken the bitter experience of this war to bring a true understanding of our country to the people of the United States. This deadly war has shown the deep friendship for Americans held by the Filipinos, and to prove the depth of our appreciation for the material benefits that America has brought to us.

Tennyson once wrote about England some lines which very well apply to the Philippines:

"Not once or twice in our rough Island story,
The path of duty was the way to glory."

Such was the opportunity of the glorious 26th. It clinched that opportunity by courageously answering the call of duty.

We now have a double duty, for while we honor those who have defended the cause of right with their lives, we must also be prepared ourselves to make the sacrifices necessary to redeem and to justify the spirit with which those boys of the 26th Cavalry fought and died.

I can do no better, I believe, than to quote a few lines from Lincoln's Gettysburg Address: "It is rather for us to be here dedicated to the great task remaining before us; that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion."—THE HONORABLE J. M. ELIZALDI, *Resident Commissioner of the Philippines to the United States.*

The Fighting 26th

by Clark Lee*

Without the 26th Cavalry, there might never have been a Battle of Bataan, and without the four months gained for the United Nations by that gallant, heart-breaking, hopeless fight, we might have lost Australia and all of our other bases in the South Pacific. The 26th Cavalry Regiment, commanded by Colonel Clinton A. Pierce, (later made a Brigadier General), fought a brilliant delaying action that for five days held up the thousands of Jap troops who landed on the east shore of Lingayen Gulf on December 22, 1941. Those invaluable five days made it possible for General Wainwright to pull back his outnumbered forces along the south shore of the Gulf and get them—almost intact—into Bataan.

As I drove up from Manila on that morning of December 22nd, after the Japs had landed at Lingayen Gulf, I still brashly believed that there were three or four divisions of American troops opposing the Japs, that our planes would sink most of their transports, and that the few who got ashore would quickly be annihilated. The truth (as I found out later) was that General MacArthur was withdrawing his troops to the Peninsular of Bataan, and that the 26th Cavalry, stationed at Damortis on the Gulf, was left to deal with the landing Japs and fight a rear guard action to cover the withdrawal. Their assignment was an old cavalry mission, and it was gallantly and successfully executed.

Perhaps the best way to tell the story is in Colonel Pierce's own words.

"We fought 'em in the streets and under the nipa shacks of Damortis all day," he told me. "Then late in the afternoon the Japs got some tanks ashore farther north and came after us with planes and tanks. We pulled back to Rosario during the night, and the next day they were on us again. We took cover in the rice fields and fought them off all day, and they fired a million shots without hurting us. We found that they could be stopped.

"The next day we fought them at Pozzorubio, which we reached during the night, and it was the same story. They couldn't hurt us until their tanks and planes came. Had we had any tanks and planes, it would have been different."

The following day, fighting at Binalonan, the 26th was cut off from its horses which were bivouacked off to one side of the town. "We could have gotten out of there all right," Colonel Pierce said, "but we fought our way over, got the horses, and pulled back during the night to Tayug."

Tayug is well to the east of Binalonan, and the main Jap force, instead of turning west and outflanking and surrounding General Wainwright's men on Lingayen Gulf, continued to follow the 26th. There was another battle which lasted all Christmas Day and then the Japs, sensing that they had been tricked away from their main objective, headed back and down the main highway toward Manila.

With the 26th covering the right flank, Wainwright kept his lines intact and backed southward.

I found the 26th headquarters on December 29th at the little town of Mexico, five miles east of San Fernando. There I heard Colonel Pierce's story, talked to his men, and had the opportunity to thank them for the fact that I was alive and not a prisoner. I had gone up to Baguio on the night of the 22nd and was cut off there. A two-day hike through the mountains had brought me out at Tayug on Christmas Eve—safely behind the 26th's lines.

From Colonel Pierce on down, the men of the 26th were full of fight. They had sustained heavy losses—12 of 36 officers dead and 180 Scouts either killed or

A platoon of the Machine Gun Troop, 26th Cavalry (P.S.) fords Tipley Creek, Fort Stotsenburg. Picture taken, late fall, 1941.

Life photo by Carl Mydans.

*Associated Press War Correspondent. Author of *They Call It Pacific*. Mr. Lee, who accompanied the 26th Cavalry during most of its gallant fighting across Luzon, has written this account exclusively for The CAVALRY JOURNAL.

Route of 26th Cavalry from Damortis to Bataan in their action against the Japanese.

missing—but they were still confident that they were better soldiers than the Japs.

"If we just had a few planes . . .," they said.

While I was with them that day, orders came for them to transfer over to the left flank of Wainwright's line. They rode—and drove their few mechanized 75's[1]—westward across the plains of Pampanga, and there they held the gateway to Bataan until it was finally slammed shut on New Year's Eve. Part of the 26th was cut off then, but most of them took to the mountains and came out safely at the town of Moron on the China Sea side of Bataan.

There was no chance for them to rest, desperately as they needed it.

The Japs were pushing on quickly, confident of an easy kill, and they soon overwhelmed the youthful troops that had been holding Moron. MacArthur had to straighten his line and he called on the 26th Cavalry to do it. Already exhausted and battle-weary, they swarmed into the little town, routed out the Japs in a fierce fight and restored the original positions.

I remember one incident related to the fighting at Moron. We correspondents had written many stories about the 26th Cavalry because it had borne the brunt of the early Luzon fighting, and someone decided that it had been given too much publicity. So when the late Melville Jacoby wrote a dispatch to *Life* describing the Moron battle, someone decreed that he must eliminate the name of the regiment and all reference to horses. As censored, Jacoby's dispatch had a lot of anonymous troops reining in their ----, spurring their ---, and shooting as they galloped their ------. Then the powers that be relented and put the horses back in.

The horses themselves, however, were not to last much longer. They had reached the end of the trail in Bataan. The survivors of the 26th were dismounted and assigned to other regiments, and the horses that they had loved so well had to be killed for food.

Brigadier General Clinton A. Pierce was given command of the troops fighting off Japanese landings on the west coast of Bataan. General Wainwright had command of that side of the peninsula, his headquarters well within range of Jap artillery.

I don't like to remember what happened in the next two months. But for me there will not be any victory—there can not be any thought that the war is won—until we are able to set free the men of the 26th Cavalry, and "Clint" Pierce, and "Skinny" Wainwright, and the Americans and Filipinos who fought with them to the bitter end—and until we can bring them home in triumph for the rewards that they deserve.

General Clinton A. Pierce (left) questions Japanese prisoners at Headquarters in Bataan. This picture was taken by Clark Lee, April 10, 1942.

Wide World

[1]Reference is probably made to the 75mm howitzer mounted on a half-track, fifty of which reached the Philippines just before war started.

Rearguard in Luzon

by Captain John Wheeler, 26th Cavalry

Life photo by Carl Mydans.

Captain Wheeler at the head of the Machine Gun Troop, 26th Cavalry, a short time before the outbreak of war.

AFTER the battle of Damortis, our cavalry was assigned to cover the withdrawal of the infantry to the south. . . .

There was barbed wire on both sides of the road, so we couldn't deploy. If a man was knocked off his horse he was trampled. The rest of the regiment went galloping down the road with bullets going by on both sides. I heard Major T. J. H. Trapnell calling my outfit and found him by a bridge. He wanted to defend the bridge, but we seemed to be the only ones left. At that moment Lieutenant Clayton Michelson of the Veterinary Corps came up with the Vets' truck. Why it wasn't blasted off the road I will never know. I helped them push it down and pour gas on it and the bridge and light it. The fire just barely stopped the tanks from crossing the bridge and getting at our infantry.

On the way back we had to go through Damortis. Japanese patrols had slipped into Damortis on a flank and effected a mild encirclement. There they were in our rear. The regiment went through Damortis fast—through mortar, rifle and machine gun fire, even shells from Jap 47mm tank guns. There was no sleep that night of December 22nd.

The following morning about dawn, the Japanese attacked—throwing fire from long range. Machine guns chattered on both sides. We withdrew troops, as we usually do by delaying action, to Pozzorubio. We had to spend the day in foxholes.

That evening we were ordered to withdraw again—about 15 miles—to Binalonan. Everything imaginable was on the road—trucks, infantry, tanks,—all mixed up in the pitch darkness that concealed us from planes. At Binalonan we managed to get a few hours rest for the first time in four days. By dawn we heard firing from the outposts and were hurriedly called into dismounted action to hold against what appeared to be an attack by an unknown number of tanks and, without any question, a superior force of Jap infantry who had ridden down in confiscated red buses. . . .

After this fight we dropped back again to Tayug. On Christmas Eve we ate for the first time in 48 hours—canned corned beef, asparagus tips, hardtack and coffee.

All this time the other divisions and regiments were pouring into Bataan behind us. During Christmas night we withdrew south of Tayug and reached Umingan after a 13-mile march, which is plenty tough in this country. Some of us fell asleep in our saddles on the way. . . .

The Philippine Scouts were absolutely splendid. Again and again, when we came in so tired we couldn't see straight, I would watch them going miles away to find some sort of hay for the horses. We kept up the daily withdrawals until about Dec. 28th, when our last position covered the final closing of the "Gate to Bataan."

After fighting a brilliant rearguard action all the way across Luzon, a part of the 26th Cavalry reached the China Sea side of Bataan and went into immediate action in the Battle of Moron.

This first-hand account, told by Captain Wheeler to Melville Jacoby, appeared in the March 2, 1942 issue of "Life," with whose permission it is reprinted here.

Captain Wheeler, now a prisoner of the Japanese, was awarded the Distinguished Service Cross.

Then we were cut off and forced to take to the mountains as the only route of withdrawal. We rode off into the hills and wandered for three days over the mountain trails—leading our horses and eating what little food there was in the saddlebags. . . . Finally we made Bagac on the China Sea side of Bataan. We had plenty of rest and most of the missing came in.

The Battle of Moron

About January 16th we learned that the Japanese, with artillery, were moving south along beaches and over trails toward Moron. The Philippine Army outfit was ordered to attack, with my mounted troop as advance guard. Under the very reassuring sound of our artillery, we moved forward across a stretch of rice paddies into the woods which surrounded the town. Lieutenant Ramsey volunteered to lead my advance guard into Moron, where, as he well knew, there was already a battalion of roughly 300 Jap infantry.

As we neared the town our artillery barrage lifted and left an unearthly quiet. Riding in between the houses with pistols raised, we did not know what was going to hit us, but knew something would. Halfway to the town square I heard Jap machine gun fire—a characteristic snapping sound caused by higher velocity and smaller projectiles than ours, and unmistakable. I rode at the head of the advance party as we moved up. When we were fired upon, we turned around, rode back and went into dismounted action. We tied our horses between nipa huts, then moved forward down the road with men in each gutter along the sides of the houses.

A messenger came galloping back from Lieutenant Ramsey saying he had been ambushed by an enemy force with machine guns, and he wanted support quickly. From there on, it was simply a matter of cautiously moving up under heavy rifle fire to Lieutenant Ramsey and his men. They had taken cover as best they could behind coconut trees and in a ditch. One was dead, three wounded in a small area. It looked like more.

Slowing up the Jap advance. The bridge was later set on fire and destroyed. This is one of the last pictures that arrived from Bataan.

Wide World

Pedro Euperio, Pvt. 1st Cl., a 19-year-old raw recruit by Scout standards, saw three soldiers ahead wearing Philippine Army uniforms. He moved forward until they fired, then shot quickly—they were Japanese disguised as Philippine officers. Despite his wounds, Euperio crept on up until ordered to lie down. About the first thing I saw was Euperio drenched in blood, propped against the house—a pistol in his one good hand, directing us how to move up, indicating points under enemy fire.

We attacked first straight through to the beach. We fired where we heard fire and were happy to see when we went through the bushes that there were dead Japanese. We got straight through to the water, reorganized and attacked around Ramsey. Using him as a pivot, we swept south and killed Japs under houses, in trees and under bushes. About 20 broke and threw down all equipment, even guns, in the high grass. I was surprised to see two of my men with bullet holes straight through their helmets, yet unscratched. I had Private Gonzalez behind me and as I went along I grabbed the Jap maps, compasses and so forth and hung them on Gonzalez. . . .

"All Hell Broke Loose Again. . . ."

Suddenly we heard a machine gun from the river, and all hell broke loose again. We realized that what we had been fighting was an advance group, and that a battalion was forming across the river.

We fought in small groups, every man for himself. Sergeant Tolentino ran forward under heavy fire and threw a hand grenade in a house that had been giving lots of trouble. Later he grabbed a light machine gun and began chasing a squad of Japanese down the road—moving in on them absolutely alone and without fear. I grabbed a rifle and followed him because a machine gun does need a little security. We had no cover but it seems to me that if you run around and fight hard, you don't get hurt—you keep moving aggressively, and it's the best defense.

Moron was a hail of bullets that never stopped. There were so many in the air that if you had put out a sheet of cloth, in five minutes it would have been riddled. At first, knowing the Jap tactics, I had a nauseated sensation of being trapped—thinking they had let us have our fun and were sweeping around behind us on both flanks. We were outshooting them and could—any day.

We fought all day. . . . The Scouts were loyal to the nth degree—all they said were things like: "Don't go there, sir, I will go." "They are shooting from that, sir." "Be careful, Captain."

Late that afternoon our mission had been accomplished—the town was seized and held adequately and we fell back again in reserve. . . . Moron, incidentally, was held for 24 hours after our withdrawal and the final withdrawal was by order. . . . The battle for Moron was a successful offensive operation.

Philippine Campaign

by Lieutenant Colonel C. Stanton Babcock,
formerly attached to United States Embassy, Tokyo

Bombing of Cavite, December 9, 1941

THE war in the Philippines began early on the morning of December 8th when the Japanese, following the pattern that they had mapped out for all their campaigns, struck from the air with tremendous force at all of the important air bases in Luzon. The attackers converged from all directions—army bombers from southern Taiwan, navy planes from carriers cruising in the China Sea and the Pacific. The results that were secured appear to have been excellent.

Capitalizing on the initial surprise, the raiders blasted the planes and fields of the American Far Eastern Air Force until at the end of two days Imperial Headquarters could announce that more than one-third of the American air strength in the Philippines had been rendered inactive.

Japanese losses were light, for their bombing, which was done from a very low altitude, not only destroyed planes and hangars, but cut up the runways so badly that American fighters were unable to get off the ground the first day. The destruction of bombers and fields from which squadrons could operate, made it virtually impossible thereafter to interfere seriously with Japanese landing operations.

Preliminary Landings

The first landing was made just before dawn on December 10th at a point about five miles south of Vigan on the island of Luzon. The initial landing party consisted of bluejackets and marines who covered the debarkation of a reinforced brigade of army troops. The opposition was extremely weak. In fact, the only American troops encountered were a scout car platoon of the 26th Cavalry—on reconnaissance duty on the west coast road—which happened to be on the spot when the first Japanese units came ashore. The Japanese were not even delayed by the four scout cars, and succeeded in damaging one and capturing another. They were, however, unable to prevent the platoon from sending a radio message to regimental headquarters near Lingayen Gulf, and in this way the first news of a hostile landing reached MacArthur's headquarters.

The troops used in this operation, as well as those used in the subsequent landing at Lingayen, had been carrying out landing operations all summer along the China coast, from Canton to the Indo-China border. Little if any military advantage resulted from those operations and it would now appear that they had been intended solely for training. If so, they were well worth the effort, for the two landings at Vigan and Lingayen were effected rapidly and with a minimum of confusion.

The Invasion of the Philippines from the Japanese point of view.

Author's Note

This account of land operations in the Philippine Campaign is based on information drawn entirely from Japanese sources: official bulletins, news reports, speeches, radio commentaries, magazine articles, and personal experience accounts written by officers and men at the front. The only Allied bulletins used were those quoted in the Japanese press.

Japanese accounts are nearly always vague, and in some cases conflicting, for the ideas of different agencies of the Government are frequently at variance in regard to the impression they desire to make on the public. Thus, the military would sanction the publication of a personal experience story which admitted temporary reverses and heavy losses, in order to play up the courage and fighting spirit of the Japanese soldier, while the bulletins issued by the Bureau of Information were inclined to minimize all enemy efforts, in an attempt to make the white man appear as an incompetent and a coward.

The information available, virtually all of which was published only in the vernacular, has been sketchy and disconnected, issued piecemeal over a period of six months, so that its translation and organization into a coherent story has presented many difficulties.

While confined to the compound of the American Embassy in Tokyo from the outbreak of war until June 17, 1942, I was cut off from any outside news. Consequently, the preparation of this paper has not been influenced by information received through any but Japanese sources. Every effort has been made to present the material without injecting either my own opinion or that of any one else, except insofar as was necessary to choose between conflicting versions of the same action.

Allied reports of the various events will undoubtedly disclose many discrepancies. It is believed, too, that the Japanese occasionally deliberately falsified dates in order to cover up reverses or to create an impression of greater speed or continuity in their campaigns than was actually the case.

It should also be remembered that all dates are one day advanced over those used in the United States. It is, therefore, the 8th of every month that the Japanese celebrate as Imperial Rescript Day, to commemorate December 8, 1941, when the Empire precipitated the war which they believe will liberate the races of Greater East Asia.

By the time that American bombers arrived on the scene at Vigan, some two hours after daylight, the Japanese had all of their troops and a good part of their supplies ashore and the air above filled with naval fighter planes from carriers of the escort force.

The American attack, which was carried out by eight light bombers (probably Douglas A-20-A's), was, according to Japanese reports, well conceived and boldly executed. The planes came in at an altitude of less than one hundred meters and dropped 250-pound bombs on the transports anchored in the roadstead and on the escort vessels which were patrolling the area. The Japanese admit the loss of one transport and one "warship" and the damaging of another transport. But if the fleet was anchored as described, and if the attack was in fact made from such a low altitude, considerably more damage must have been inflicted, although it should be remembered that the immediate effect on the landing force was negligible because most of its personnel and matériel were already ashore.

The Japanese claim that all of the American bombers were shot down by their protective fighters. Though this is undoubtedly an exaggeration, American losses must have been heavy, for the second attack, made some two hours after the first, was executed by only three planes.

The landing at Legaspi on the southeastern tip of Luzon, was carried out by a similarly organized brigade which had been assembled in the Marinas. The assault took place at dawn on December 12th and apparently was unopposed. Coming two days after the landing at Vigan and at the opposite end of the island, it resulted in delaying the despatch of American reinforcements to the northern sector. The timing of these two preliminary expeditions was excellent, for they kept the main American forces immobilized in the central plain awaiting the main Japanese landing. Both advance units behaved as though they were establishing beach-heads to protect the landing of larger forces. As the American Air Force had been driven from the air, except for a fighter squadron or two used to protect the concentration of the main army north and east of Manila, MacArthur's headquarters was deprived of its most important reconnaissance agency and could only wait blindly for the blow to fall.

Main Landings: Lingayen and Lamon Bay

All the Japanese actions up to that time had indicated that their main attack would come at one of the two places where landings had already been effected, *i.e.*, Vigan and Legaspi; and the defensive preparations of the Americans apparently were based on that assumption. The subsequent landing of the two main invasion forces at Lingayen and at Lamon Bay is regarded as one of the most brilliant moves of the entire war in the Far East. It required the Japanese to execute their main landings in the face of enemy resistance, but it split the American forces to such an extent that they

were unable to bring sufficiently strong forces to bear at any one point.

The troops sent to attack the beach-heads at Vigan and Legaspi were threatened in the rear when the main landings came at Lingayen and Lamon Bay, and had to fall back before they could accomplish their mission. This in turn enabled the Japanese advance expeditionary forces to facilitate the main landings by flank attacks on the American troops opposing those landings. This propensity for doing the unexpected, and a willingness to take great risks, have characterized the Japanese actions throughout the war in the Far East, and contributed in no small degree to their initial successes.

The first landing in force was made at Lamon Bay,

European.

Japanese troops attack a strong point of American resistance on Bataan. Photo arrived in the U. S. by clipper before the fall of the Philippines.

east of Manila, on December 22nd. The only opposition came from the normal beach guard units, for the bulk of the defending troops in the southern part of the island were engaged with the Japanese brigade at Legaspi. Sufficient American troops had been sent to that area to overcome the Japanese already established ashore and so prevent the landing of additional troops in that same area.

Had the Japanese attempted to land their main force at Legaspi they would have found their covering force driven back onto the beach, and it is highly probable that that part of the expedition would have ended in failure. But the bold landing of a large expedition at Lamon Bay without the protection of a covering force threatened the rear of the American troops pressing on the beach-head at Legaspi, forced their withdrawal, and destroyed the last chance the Americans had of defeating the Japanese in detail and preventing them from concentrating a large army on the island.

After this only one thing could save the Philippines: a successful attack by the main American army against the army advancing on Manila from Lamon Bay. This MacArthur apparently prepared to do, but before the battle could be joined in earnest there came news of the successful landing of another large contingent at Lingayen, and there was nothing left but to abandon Manila and withdraw to the Bataan peninsula, where the numerical superiority of the Japanese troops would be offset somewhat by the narrow front on which they would have to attack.

The Japanese attack on the beach at Lingayen on December 24th was further evidence of the perfection of their timing. Lingayen is the only spot on the west coast where a large force can be landed, and it was of course defended by all the American troops that could be made available. Any unassisted attempt to land there would have been exceedingly costly to the Japanese and might even have ended in failure. The first attempts to land in the early morning were repulsed; and the second attack, made after furious bombing from the air and shelling from the fleet, though successful, was costly and was stubbornly contested, and had actually been brought to a standstill by about four o'clock that afternoon.

Just then, when one more counterattack from the exhausted and outnumbered Philippine-American troops might have driven the invaders into the sea, the Japanese column, which had landed at Vigan and had been moving south by forced marches, arrived at San Fabian on the gulf and from there launched an attack on the right flank and rear of the lightly-held American defense lines. The attack was repulsed, but the troops used to repel it were the last of the reserves (a battalion of the 57th Infantry, P.S.),[1] and their diversion to that task prevented their being used in a counterattack against

[1]The Japanese reported the 57th Infantry. Actually, it was the 51st Infantry, P.A.

European.

This photo from neutral sources states that a Japanese landing party has reached shore in the Solomons Islands. This action is similar to landings made in the Philippines.

the Japanese troops which had fought their way ashore. During the night the Japanese succeeded in landing reinforcements, and the last chance of repelling the invasion at this point was lost.

The next two days were employed by the Japanese in enlarging and consolidating the beach-head, taking over and repairing the docking facilities at Lingayen, and landing more troops and supplies. About five divisions with Corps and auxiliary troops composed the expedition, and such was the thoroughness of the Japanese organization and the speed with which they worked that by midnight of December 26th, all these troops were in position and ready for the push south.

Advance to Manila

When it became evident that the beach defense positions were no longer tenable, the American forces—which apparently consisted of portions of the First Philippine Division with the 26th Cavalry (Philippine Scouts) and a battery of horse artillery attached—withdrew during the night to positions in the vicinity of San Carlos. Any further attempts to interfere with the Japanese landing would have involved the American troops in an action from which they probably could not have extricated themselves, and the road south to the plains around Manila where MacArthur's main army was concentrating would have been completely undefended.

The Drive South

When the Japanese jumped off on their southward drive at dawn on the 27th, they found that only a small force, consisting of the 26th Cavalry with its attached artillery and a few engineers, had been left to maintain contact with them and to destroy the roads and bridges in an effort to delay their advance. The Americans made no effort to hold any positions even long enough to make the leading Japanese division deploy, but contented themselves with employing the individual rifle troops of the cavalry as independent security detachments for the engineer working parties while the latter were engaged in their demolition work. It was a typical cavalry delaying action, with the Americans holding up the Japanese advance guards at the road blocks just long enough to make them halt their mechanized vehicles and deploy their cyclist infantry for an attack.

Before the attack could be driven home, the engineers would complete their work of destruction, and the cavalrymen would fade away through the woods, bamboo thickets, and cane brakes to reassemble and repeat the operation three or four miles farther down the road. Meanwhile, the Japanese would be left with two or three hours repair work on their hands and the problem of setting up their own outpost line to cover their engineers while the work of reconstruction went on.

The Japanese had organized their advance forces in the best possible way to cope with these tactics. Four years of operation against lightly armed guerrilla forces in China had taught them that the spearhead of their advance should be composed of light tanks and a mobile body of troops such as cavalry or cyclist infantry. The tanks would suffer comparatively light losses when opposed by light cavalry, and the light mobile troops could drive off the enemy covering forces when the tanks were held up by a road block or other demolition work.

In China the tanks were used as the point of the advance and, acting aggressively, pressed forward along the road until held up by a road block. If the terrain permitted, they attempted to outflank the resistance in their front. But if the site of the demolition work had been located in a narrow defile, the leading tanks opened fire from the road on any targets they could find. The supporting cavalry was then brought up, dismounted, and used to drive off the enemy covering forces. This allowed the engineers to repair the damage, after which the advance was resumed.

These tactics were employed by the Japanese on their march south from Lingayen, although they had no cavalry. That branch was not considered suitable for use in landing operations, because its transport by sea was uneconomical and difficult in the face of active resistance. In its place, they employed cyclist infantry. These required no additional transport space for carrying horses and forage, and were also useful as infantry in the assault on the beach. Later, mounted on bicycles, they possessed sufficient mobility to accompany and support the advance mechanized units.

From December 26th, when the advance on Manila from Lamon Bay and Lingayen began, all the efforts of the Japanese were directed towards bottling up the American forces in the vicinity of Manila and preventing their occupation of the Bataan peninsula. Their two invading columns were ideally situated to accomplish this, for one was approaching from the east and another was pressing on Manila from the north, while the American army had to withdraw to the west across the very front of the latter Japanese unit.

This entailed almost superhuman efforts on the part of the two small American rear guards which were given the mission of delaying the Japanese advance until the withdrawal could be accomplished. They performed their work well, for the Japanese did not enter Manila until January 2nd, and by then the main American forces with the bulk of their equipment were safely in position on Bataan.

The virtual annihilation of the 26th Cavalry and two battalions of the 57th Infantry[2] speaks well for the gallant behavior of the rear guards which made this move possible.

[2] 51st Infantry.

(This article will be concluded in the next issue with a graphic description of the siege of Bataan and the fall of Corregidor.)

JAP 75's

The Japanese 75mm—2590(1930) field gun shown in these pictures, and probably used in the Philippines, is modeled after the French Schneider field piece. It is a modern high velocity weapon and, although dated 1930, is believed not to have been issued until much later. The gun is intended for high speed towage by mechanized equipment.

Lone U.S. Tank Slugs It Out with the Nazis

German Mark IV tanks, taking part in the first direct German-American action of this war, lie shattered in Tunisia.

WHEN the Germans launched their unexpected attack on the lightly held American positions in Tunisia in early February, one lone American tank and crew boldly took on a running fight with a column of German Mark IV's and one giant 52-ton Mark VI. They destroyed four of the Mark IV's, rescued a column of American trucks and half-tracks, and saved an estimated 300 lives.

Here is the story of the embattled tank, the "Texas," as told by its commander, Lt. Colonel Louis V. Hightower, and reported through Associated Press by Harold V. Boyle:

We pulled out about 7 o'clock that morning while about thirty tanks were attacking us at a hill called Djebel Lessouda, not far from Faid.

When we got there, fifteen Mark IV's were ahead of us and twenty-two more on the crest to the left.

We sat there and shot at them, knocked out about five or six, and lost three ourselves. Then the twenty-two tanks came over the hill toward us and turned out to be fifty, including at least four of their giant Mark VI's which so far as I know have never been in action on any other front before.

We drew back to cover as they tried their usual trick of envelopment. We kept pivoting back and shooting at first one German flank and then the other. We kept from being surrounded, but at a heavy cost—then their dive bombers caught us, and came over in wave after wave.

They didn't hurt us much, but smoked us up so that we couldn't see through the dust. We pulled across two miles of open field into Sidi Bouzid while our artillery covered us by using their 105mm howitzers for direct fire. They were hitting German tanks at every pop, and I saw three go up in flames with just three rounds.

We reorganized in the town, but after two hours they began another huge double envelopment. We got our artillery and two supply trains safely out, and then started down the road to Gafsa ourselves.

After getting all our tanks away except two light and two mediums we took out across country and came across nine Mark IV's and one Mark VI about 700 yards away. They were opening fire on one of our columns of half-tracks and light vehicles, which were completely helpless before them.

The guns on the other medium tank were jammed, and since the light tanks were too thinly armored for the task before us, I sent all three away and signaled

the column of our light vehicles to swing behind us.

As the Germans turned in for what they thought was a picnic, we let go and struck their commander's tank with our third shot and stopped him as cold as if he had hit a tree. We got a second tank with one shot.

Pulled Away Firing

The eight remaining Nazi tanks then braked to a stop, but we kept going at about fourteen miles an hour, and fired steadily as we pulled away. We hit one tank three times before discovering that it was a Mark VI. I saw the last shell burst against him but don't know whether he was disabled. However, he didn't fire any more.

As another Mark IV came up to him, we hit it at the same range with one shot. It went through the turret and the tank broke into flame like a flower.

Another Mark IV approached the burned tank—which was stupid because we had only to bring over our gun a hair—and he flamed up with our first shot. Then our gun momentarily jammed as the five remaining Mark IV's really opened up on us.

We could actually see the shells coming along close to the ground like a ricocheting stone in water.

One shell fragment came right down the tube of our gun, but caused no serious injury among our crew. Another shell went through the bogie wheels, under the tank, and tore out the other side like a rabbit. Another hit our turret but didn't penetrate. Then a shell struck our suspension system.

Each shell that hit sounded like a giant anvil or tremendous bell. It made your ears ring. As soon as our gun was unjammed, we began firing again but another shell mashed the bottom of our left rear gas tank, and flaming gasoline spurted over the back of our tank, its tracks, and on the ground about us.

"Now Is the Time to Git"

I shouted to my boys: "Now is the time to git." We boiled out of there like peas from a hot pod before the tank had stopped running. We dodged behind the tank and kept it between us and the Germans. After walking a couple of miles we fixed up a half-track we found abandoned, picked up a soldier with a broken hip near by, loaded him in and drove on.

We came to another tank which some of our fellows were about to destroy because of engine trouble. We put it back in shape. Our crew got in and we picked up our convoy of half-tracks and jeeps and came on home.

These two German Mark IV "specials," with new long 75mm tank gun, were knocked out by American forces in Tunisia. Gun is super-high velocity, has muzzle brake, and uses electric instead of percussion primer. Turret is that of a Mark III.

U. S. Marine Corps.

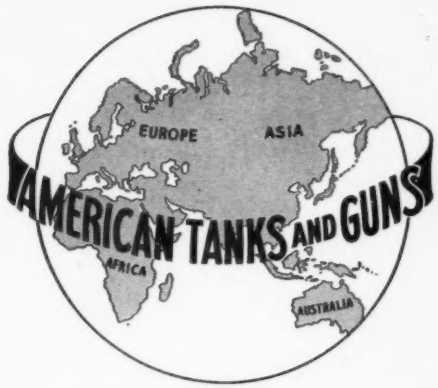
Guadalcanal

U. S. Marine tanks rumble through palm trees toward the front lines to assist ground forces turn back counterattacking Japanese at Guadalcanal.

Tunisia

A self propelled 105mm howitzer or M-7 ready to roll in Tunisia.

Wide World



Buna

General Stuart tank advancing in Buna. Australian soldiers are seen marching ahead of the tanks into the tough battle, which the Allies finally won.

European.

Sovfoto.

Russia

American M-3 General Stuart tanks cross a mountain river in the Northern Caucasus.

Libya

General Sherman, U. S. built 30-ton tanks move up towards the Alamein line before the great Eighth Army offensive started. The General Sherman has a speed of 30mph, and its armament includes a 75mm gun in the turret with a 360 degree traverse. It has an all-cast body built in the U.S.A.

British official photograph.

American Bivouac in North Africa

The Fighting French Reached Tripoli from South and East

Troops of the famous French Camel Corps took part in reconnaissance work for Fighting French Brigadier General Leclerc's light armored column.

TWO Fighting French groups participated in the Allied drive that forced Rommel from the gates of Alexandria to the relative shelter of the Tunisian Mareth line. One, under the command of General Edgar de Larminat, moved along with the British Eighth Army all the way from El Alamein to the "shores of Tripoli." Most of these men were veterans of the Battle of Bir Hakeim. The other column, under the command of Brigadier General Jacques Leclerc, made a record-breaking trip from the Tchad region—the hub of Africa—right up to Tripoli. They fought all the way, and arrived in schedule time to occupy Fezzan, now one of the missing jewels of the Italian Crown.

These two Fighting French groups differed in size and equipment, as the military situations they had to face were obviously different. The troops under de Larminat had to pursue a strong armored force of well trained and equipped Germans and Italians. The group under General Leclerc had to accomplish a long trek across mountains and desert, and it had to attack well defended and entrenched positions surrounding the Italian oases and the little villages that were the anchors of Axis communications across that region.

Equipped with British tanks, these Fighting French tank troops, along with their British allies, chased Rommel all the way from Egypt to Tunisia.

General de Larminat's troops used Brenn guns, medium tanks, and artillery in their march to the west. General Leclerc's forces used camel troops for reconnaissance and cleaning up purposes, light trucks, armored cars, and light artillery in their fight north to Tripoli. Both groups are now placed under the command of General de Larminat, since General Leclerc has been appointed to General Montgomery's staff.

The most severe fighting of this column took place at Cum el Araneb, Catroun and Mizda. Despite the constant fighting, skirmishes, and the great difficulties encountered in supplying the column with the necessary food and water, the losses were light.

To bring a full truck-load of gasoline from the Camerouns, where gas is unshipped, to Mizda, the town where the last fighting of the column took place, it was necessary to start with three fully loaded trucks. Because of the amount of arms and ammunition found in the conquered Italian outposts, however, the problem of supply in munitions and arms was simplified.

A small formation of the Free French Air Force kept the column informed of the movements of the enemy, maintained communications between the various elements of the column and, when necessary, brought the indispensable supplies.

On several occasions this flying group was attacked by Italian fighters. Once it managed to damage two of them which were later found in very bad shape on the Sehba airdrome when that base fell into the hands of General Leclerc's men. Many Italian soldiers were made prisoners, but it has not yet been possible to ascertain the exact number.

The column arrived in Tripoli soon after the Allied troops from Egypt.

The Fighting French light armored division that accompanied the Eighth Army from El Alamein in its pursuit of Rommel's forces across the Libyan desert, continued on into Tunisia.

Now the German *Swastika* flies no more in Bengardane, where the French *Tricolor* has been run up again by the Fighting French—a symbol of things to come in France proper.

Soviet Cavalry 1918-1943

by Colonel General O. I. Gorodovikov, Red Army

MODERN warfare is characterized by the massed utilization of motors and multiform technique on land, on water, and in the air. This characterization has exerted its influence on tactics, and has also modified fighting formations, but from experiences of the present war, it has been proved that the value of cavalry as a modern arm of the service has not diminished.

Equipped with the powerful, first-class weapons created during the years of the Stalinist Five-Year Plans, the Red cavalry has successfully stemmed the advance (and started the retreat) of the German armored hordes. The charred remains of burned and wrecked tanks, the twisted frames of guns and machines, as well as thousands of corpses, lined the roads along which the Germans advanced into Russia. (The same roads over which the Germans are now retreating.)

Birth of Red Army Cavalry

Modern Soviet cavalry is an outgrowth of centuries of Russian cavalry tradition. In the military annals of the Russian people, the cavalry has always shown its heroic fighting skill, and its able and bold action has often decided the issue of battle.

During the First World War, the Russian cavalry had difficulty in showing its fighting abilities: first, because of the positional warfare that was waged, and secondly, because of the number of tsarist generals who failed to make proper use of this arm. In fact, the inefficient use of cavalry in almost ALL of the armies during the First World War, caused many shortsighted "theoreticians" to claim that cavalry was powerless against modern technique—that its rôle as an independent arm of troops was over. In this fallacious viewpoint, they contrasted the "new technique of war" with the former "purely saber cavalry," instead of visualizing a re-armed cavalry with tactics adapted to conform with new technical equipment.

In Russia, during the Civil War of 1917-19, Stalin visualized the huge rôle of cavalry as capable of performing innumerable independent missions. He stressed its mighty power when used in large forces rather than in small dispersed units. With great insight, he foresaw these large cavalry forces as one of the most decisive factors in the strength of the Red Army.

This new organization was started when the 4th Cavalry Division was formed in December, 1918, near Tsaritsin (now Stalingrad). Later, in July, 1919, with the addition of the 6th Cavalry Division, the First Cavalry Corps in the Red Army was formed, under the command of General Budyenny. This cavalry corps immediately proved of tremendous significance and value by dealing the Whiteguard forces many defeats.

When the Whiteguard bands threatened the capital of the country in the autumn of 1919, Stalin proposed a brilliant plan for routing them by striking through Karkov-Donbas-Rostov. He employed large cavalry forces as the decisive means of carrying out this plan. On November 19, 1919, as a result of the success of this operation, Budyenny's cavalry corps was expanded into the *First Mounted Army*, commanded by Voroshilov,

Budyenny and Schadenko. This Mounted Army, under Stalin's direction, was the basic and deciding factor leading to the destruction of the enemies of the Soviet people on all the fronts of the Civil War.

Besides the First Mounted Army, other cavalry units also covered their standards with undying glory in the grim years of the Civil War. The cavalry division commanded by Tomin on the Eastern Front in 1919; the Second Mounted Army, formed at Stalin's initiative on the Wrangel Front during the summer and autumn of 1920; the 3rd Cavalry Corps on the Western Front in the summer and on the Crimean Front in the winter of 1920; the guerilla cavalry detachment in the Trans-Baikal and Amur region in 1921-1922; the 12th and 18th Cavalry Division in the Trans-Caucasus in 1920-1921; the cavalry on the Turkestan Front in the struggle against the Basmach bandits from 1919 to 1926—all these cavalry units showed by their fighting actions in the most varied circumstances what strategic cavalry is capable of doing when it is properly utilized and directed.

Thus, as far back as the 1920's, Soviet cavalry utterly refuted the assertion of the many "theoreticians" that "cavalry no longer played a rôle" in modern warfare.

Growth and Equipment

In the years of peaceful upbuilding that followed the Civil War, new arms of the service were formed in the Soviet Union—aviation, motor-mechanized units and others—but along with these, the Red cavalry continued to grow and perfect itself by acquiring new technical equipment.

In paying considerable attention to cavalry, Stalin was confident that cavalry units, fitted out with modern technique and well trained in military tactics, would find wide application in the impending war. In his greetings to the First Mounted Army on the occasion of its fifteenth anniversary (Nov. 19, 1934) he wrote: "Let us hope that the sharp sabers and the well aimed bullets of the Red cavalry will, when circumstances require it, serve the cause of the defense of our great country as it did in the not distant past."

This Red army detachment commander reports to Marshall Budyenny at an observation point. Lieutenant General Kureliumov stands behind the Marshall.

The Red Army cavalry was copiously equipped with machine guns and artillery of all types, trench mortar guns, tommy guns, means of antiaircraft and antitank defense, tanks, and armored cars. With these means, it acquired, more than ever before, the character of a powerful arm of the service, capable of waging all manner of warfare.

In actual operations at Lake Hassan (1939), in the encounters near the Halhin Gol River, and in the battles on the fields of Finland, the cavalry units had the opportunity to test their guns, improve their formations and to master modern forms of warfare. Soviet cavalrymen made a careful study of the experience of the latest wars in Europe, and on the basis of the conclusions drawn from this study, they reorganized the arm, improved their equipment, and prepared for combative action.

Soviet cavalry now comprises a manifold, well organized, formidable system of mechanized equipment and, in close coördination with land and air units, it presents a redoubtable force to the Hitlerite army, and particularly to their motor-mechanized detachments.

For the second year now the Red Army and the whole of the Soviet people have been waging a war of liberation against the German invaders, and the Red cavalry has completely justified the hopes of the leader of the Soviet people. By speedy maneuvering and the skilful combination of mounted and dismounted warfare, cavalry units, in coördination with other arms of the service, have inflicted and are still inflicting heavy defeats on the Hitlerites. Wherever the enemy has come up against Soviet cavalrymen, he has invariably been beaten.

Protecting the Withdrawal, 1941

In the initial period of the war, the cavalry of the Red Army carried out, for the most part, operations of a defensive character, which enabled their army units to fulfill two general strategic objectives: first, an orderly withdrawal to join the main forces of the army; and second, infliction of the maximum damage and losses to the man power and military technique of the invaders.

By thrusting "wedges" of armored tank units and motorized infantry into our defense positions, the German troops, accompanied by massed air forces, tried to make flanking detours around our units, close the wedge, surround our troops, and operate in our flanks and rear. At the same time, their own flanks were very often exposed to the blows of our cavalry detachments,

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which broke through the lines of the enemy defense.

From June 24-31, 1941,[1] the cavalry detachment, commanded by Major General Kryuchenkin was entrusted with the defense line at the Ikva River, in opposition to the units of General Kleyst's 1st Armored Tank Army. On June 26th and 27th, acting in coördination with tanks, the detachment defeated the 16th German Tank Division, smashed more than 40 tanks and a battalion of motorcycle troops, and captured an antitank battery and a large number of motorcycles, trucks and guns. More than 1,000 German soldiers and officers were killed in this battle.

During the same period, Major General Belov's cavalry corps held the German-Rumanian army units at bay near the fordings across the Reut River, and, with a powerful blow of cavalry and tanks, inflicted a decisive defeat on the 50th German Motorized Division and the 1st and 5th Rumanian Infantry Divisions.

In August, 1941, several units of the 2d Armored Tank Army of the much vaunted General Guderian—one of the theoreticians of tank warfare—began advancing from the district of Chausi and Kricney in the direction of Roslav in an attempt to emerge behind the lines of our troops to the north of Roslav and surround them.

In their turn, the flank units of Guderian's group were exposed to the attacks of our cavalry detachments commanded by Colonels Yakunin and Kuliev. Effecting a forced march under cover of night, the Soviet cavalry, at dawn on the 2nd of August, attacked Guderian's columns near Shumachi and destroyed 30 tanks, 50 machines with infantry, and 2 trench mortar batteries. The cavalry thus engaged the main forces of the enemy and, by skillful maneuvering, enabled our troops to carry out their withdrawal as planned.

In the operations at Shtepov in the Ukraine during October, 1941, when the German armored columns were straining toward the northeast to reach Suman and surround the Soviet troops, General Belov's cavalry, augmented by tank units and motorized infantry, skilfully maneuvered and emerged on the flank of the detouring German group. With a powerful flanking blow, the cavalry routed the 9th Tank and the 25th Motorized Divisions of the Germans and wiped out 1,500 soldiers and officers and captured 300 trucks, 180 motorcycles and much other miscellaneous war material.

Attacks Against Armored Forces, 1941-1942

At Rostov (Nov. 28, 1941), for the first time, the Hitlerite army was counterattacked and fled the spot, and Kleyst's crack 1st Armored Tank Army was routed. Here, Soviet strategic cavalry carried out its first active offensive operations. The strong attack of the cavalry group of the Southern Front, was dispatched by Colonel General Cherevichenko to the flank of Kleyst's army, and, together with an attack carried out by our infantry and tanks, completely routed Kleyst's force comprised of the 13th, 14th, and 16th Tank and the 60th Mechanized German Divisions. This action re-

Major General Belov, Commander of the First Cossack Corps of Guards, defeated Guderian's armored columns during the First Battle of Rostov in 1941.

[1] Germany invaded Russian soil June 22nd.

sulted in the liberation of Rostov from the enemy.

At about the same time on the Central Front, the German command concentrated a strong army group in the region of Yelets, where they intended to take the districts of Gryazi and Voronezh for their winter quarters and cut off the railroad communication between Moscow and the North Caucasus. In the operations undertaken to wipe out this grouping of the Germans, an active part was again played by Red Army cavalry.

On December 6, 1941, the Third Guards Cavalry Corps under General Kryuchenkin aimed a blow northward from the district south of Yelets, and in the resulting battle destroyed the 95th German Infantry Division and emerged in the neighborhood of Rossoshnoye on the communication lines of the enemy's 45th Division. Here the cavalry guards closed the circle around the German grouping by joining with Colonel Kuliev's cavalry unit, advancing from the region of Telegino. In coördination with rifle units and tanks, they utterly wiped out the 45th, 95th and 134th German Infantry Divisions, which lost 12,000 killed and wounded and left 226 guns, 319 machine guns, 907 trucks and a large amount of other war materials on the field of battle.

On December 7th, the First Guards Cavalry Corps inflicted a powerful blow at the flank of the German formation near Stalinogorsk and Venyev (to the south), cut the German "wedge" at its very foundations, and in coördinated action with Soviet tank forces, utterly wiped out the 17th Tank, 29th Motorized and 167th Infantry Divisions of Guderian's grouping. After suffering huge losses in both man power and machines, they were forced to retreat toward the southwest and to abandon all hopes of approaching the Soviet capital.

Lieutenant General Kirichenko, Commander of the Fourth Cossack Corps of Guards, was particularly prominent in newspaper accounts of the Soviet advance in the Caucasus in January and February, 1943.

Major General Dovator, hero of the siege of Moscow, was reported killed in action while on a special mission behind the enemy lines.

Cavalry at Moscow

The detachments of our strategic cavalry carried out important, responsible tasks at the most crucial stage of the war against the invaders—the great battles near Moscow where, under the personal leadership of Stalin, the forces of the Red Army inflicted bitter defeat upon the Hitlerite plunder-army and repulsed it from Moscow.

Hitler had placed before his troops the task of "finishing with the Soviet capital regardless of everything, by whatever means, and in the shortest possible time," and had thrown two-thirds of his aviation, 13 tank and 38 motorized and infantry divisions on the storm of Moscow. He was resolved to grip Moscow in a vise from the north and south and thus possess himself of the heart of the Soviet Union.

From the South, picked troops from General Guderian's 2d Armored Tank Army carried out a strategic detour in the direction of Kashira and Ryazan. The vanguard of this group approached to within 25-30 kilometers of these two points, and the heroic cavalrymen, commanded by General Belov, were the first to deal a crushing blow at the armored columns of General Guderian's troops.

Enjoying the support of the whole Soviet population in the territory temporarily occupied by the Hitlerites, our cavalry units and detachments penetrated far behind the enemy lines and carried out bold and energetic operations against the foe's communications. Particularly successful was a raid behind the lines of the 6th German Army by the Cossack groups commanded by Major General Dovator, Hero of the Soviet Union. Breaking through to the enemy position, these Kuban-Cossacks (armed only with machine guns for they had no artillery) carried out a heroic raid behind the enemy lines and routed the 430th Infantry Regiment.

Despite the fact that the German command dispatched considerable forces against the Cossacks, whose appearance in the countryside had caused terror and panic behind the German lines, General Dovator's cavalry broke through the enemy front for a second time and united with their own forces safe and unharmed.

The extent of the panic that reigned behind the German lines may be judged by the fact alone that the German prisoners claimed that "a hundred thousand Soviet Cossacks had gotten through their lines!" while in reality Dovator's cavalry numbered no more than 2,000 sabers.

After the Germans had been repulsed from Moscow in December, 1941, General Dovator was extremely successful in the pursuit of the Germans. Having met bitter defeat near Ruza, the Germans began to withdraw and covered their retreat with a strong rear guard. General Dovator sent a part of his corps after the German rear guard, while his main forces set out in pursuit of the Germans. Going parallel with the main column of the retreating Germans, he followed along forest roads, and came out to meet the 78th German Infantry Division. With swift, fierce attacks, he completely routed the enemy, utterly wiped out the man power and captured 82 guns, 143 machine guns, more than 400 trucks and other trophies.

Independent Missions

Major General Sokolov's units acted with equal daring and resoluteness. Penetrating far behind the enemy lines, they seized very important communications of the German troops, and over a period of several months inflicted heavy losses by their unexpected attacks. They thereby ensured the successful actions of our army units advancing from the front lines.

On another occasion, the Guards Cavalry Division commanded by Major General Tutarinov, was given the assignment of holding an important defense boundary. The enemy sent several units of an Alpine rifle corps, two tank and two infantry divisions into attack against the cavalry division, but despite the fact that the Germans far outnumbered them, the cavalry division held the line for several days and inflicted a crushing defeat on the foe. Wedging in between the advancing German units, under cover of night, the Cossacks left only small forces to screen their movements at the front, moved their main forces behind the enemy lines, and emerged in the rear of the central German grouping. At dawn the cavalry guards began a fierce mounted attack and by skilful maneuvering succeeded in cutting off the enemy infantry from their tanks. Then, in coordination with other forces, they completed the rout of the "SS" regiment and 4 Alpine rifle regiments.

In the vicinity of Kropotkin the Cossack Guards Cavalry Division commanded by Major General Milerov carried out a series of swift mounted attacks in coördination with a squadron of storming planes. In the course of a single day it routed a detachment of Rumanian cavalry and killed more than a thousand Rumanian soldiers and officers.

At still another time, the Germans sent two infantry regiments, supported by a considerable force of artillery and six tanks, against a guards cavalry unit. Cavalry Commander Danilovich went into counterattack and, after cutting a battalion of the infantry to pieces, scattered and repulsed the rest.

Rearguard and Counterattack During Withdrawal, 1942

During the second strategic withdrawal of the Red Army (July, 1942), a large group of German mobile forces having penetrated into the district near Balta, threatened to cut off the withdrawal of our rifle units by moving on Pervomaisk.

The cavalry corps under command of Major General Belov was dispatched to halt the enemy's advance, and in two days and nights it not only covered more than 100 kilometers in forced marches over roadless country, but engaged in battle during the course of the march. By a sudden blow from the flank, the corps drove the enemy out of Balta, and in this operation defeated the 19th Motorized, 293rd and 297th Infantry Divisions of the German army and ensured the withdrawal of Red Army units according to plan.

The entire Soviet people is proud of the fighting exploits of the Cossacks commanded by Lieutenant General Kirichenko. They show equal skill and bravery in fighting either mounted or dismounted. They make bold onslaughts in mounted formation into the enemy ranks, and with true Cossack daring and prowess, they do away with the German invaders. There is an iron rule prevailing among the Cossacks—not a step back without the commander's order. In ten days of fighting the Cossacks of Lieutenant General Kirichenko's guard corps destroyed 50 German tanks, 3 airplanes, 10 heavy gun batteries and captured 8 radio stations, and wiped out with sword and shell more than 5,000 German soldiers and officers.

Success of the Soviet Cavalry Guards

At a crucial moment for the country, the Cossacks of the quiet Don, of the majestic Kuban, and the stormy Terek, the peoples of Kalmykia and the steppes of Stavropol rose up in struggle against the mortal

In the northern Caucasus, the entire population helped the Red Army in the defense of their native land. The Germans in their drive south from Rostov in 1942 were never able to penetrate these mountains.

enemy. The entire population of *stanitsas* and villages —brothers, fathers and sons, and sometimes whole families—joined the ranks of the Red Army as volunteers. These people, from one village and from the same families, mounted on their own horses, united together to form companies, divisions and corps. Experienced fighting commanders were placed at the head of these Cossack units and detachments. They went into battle to take their revenge on the enemy for our desecrated land, for the plunder of our towns and villages, for the atrocities and violence perpetrated upon our women and children.

With rage and hatred for the foe in their hearts, the Cossacks are fighting ably and bravely—defending every inch of native soil. Their fighting motto is not only to halt the enemy but to beat him and drive him out of the country.

Merited recognition of the heroic actions of cavalry units is found in Stalin's order awarding the rank of guardsmen to four cavalry corps and a separate cavalry division: "For valor displayed in defending the country against the German invaders; for endurance, bravery, discipline and efficient organization; for heroism of the men and officers."

The Soviet Cavalry Guards of 1941-1943, just as the First and Second Mounted Armies formed in 1919-1920, are a genuine menace for the Hitlerite army of pillage and plunder. They set the pace for all the units of our glorious cavalry forces, which follow close behind, smashing the invading hordes.

The success of our cavalry detachments is ensured because at their head stand educated, daring and battle-hardened officers; while cavalry units are commanded by experienced and discerning generals. Among the cavalry commanders there are many older men who went through the school of the Civil War, as well as many young, valiant and talented officers. These men are not given to swagger and conceit. They persistently study and master new methods and forms of warfare. They learn all that they can from actual experience in battle and teach their subordinates.

In hard-fought battles, matching their forces in single combat against the perfidious enemy, Soviet cavalry is adding new pages to the glorious history of Russian cavalry. They are hastening the day of final victory over the enemy. They have firm faith that on the battlefields of Europe, English and American soldiers will soon be fighting side by side with them, so that by their united efforts Hitlerism will be destroyed and wiped out for all time.

BELOV'S COSSACKG

by S. Garin

THE weeks I was able to spend with Belov's cavalry corps gave me a chance to see for myself what a tremendous rôle modern Soviet cavalry played in the smashing of the armies of Hitler at the approaches to Moscow. It is not only horsemen that make up a modern cavalry force. The bulk of it, of course, is made up of mounted men armed with tommy guns and machine guns, but added to it are also tank, artillery, air and other specialized units acting in strict coördination.

Lieutenant General Belov's corps include representatives of numerous Soviet nationalities. They are all men united in their hatred for the enemy and in their devotion to the service they have entered.

But that does not mean that they only know their horse and keen, cold steel, as horsemen of foregone years. On the contrary, these cavalrymen of 1942 have among them many a skilled parachute jumper, veterans of successful descent operations; people who know the tank from A to Z, and men who can handle any gun made, including the guns taken from the Germans, and to whom modern infantry tactics is an open book.

"It cannot be otherwise," Belov himself often says. "The blade is a wonderful thing, but not always the most appropriate weapon. And it is not for Cossacks to sit back and wait!"

General Belov

I first met General Belov on the distant approaches to Moscow in the days when a fierce struggle was being fought for the Soviet capital. The commander of the cavalry guards corps was standing beside his horse, tenderly patting its sides. He was talking to a young Red Army man. Approaching nearer, I caught the end of the conversation:

"So you think my horse is something special," he was saying. "All horses like cleanliness, and what they look like depends on how you take care of them. I am an old hand in the cavalry. . . . You weren't yet born when I joined. And I must say that not a single day has passed that I haven't looked after my horse. And I haven't any too much time on my hands, have I?"

Later on I found out that while inspecting his squadrons before going into action he had noted the unsatisfactory condition of the horses of some young cavalrymen. He had immediately detected evidence of careless grooming. Now, five days later, he had looked up the men and had given them his advice.

To me this episode is quite characteristic of this fighting general. A courageous soldier, he is exacting toward himself and others, and makes his force fully worthy of its name: The First Cavalry Guards Corps.

"But training told . . ." Below Soviet cavalrymen are shown firing over immobile horses during training period.

Night Attack

During the spring thaw of 1942, the rising waters inundated the meadows and gullies, and turned the swamps into welling mire. From the southwest it was impossible to approach the city. The Germans were jubilant: "Wait until the river overflows its banks yet; the Russians can then just try and get at us!" During the winter they had fortified the approaches to the city, and even in places which now were under water there were forts placed in checkerboard fashion.

The Germans felt quite sure of themselves behind the barrier of water, reinforced concrete, and fire. The local people say that as the Germans soused themselves to celebrate Easter they kept on saying: "We'll sit here until summer, and then we'll push forward. . . ." But things turned out differently.

One nice night all the seemingly insurmountable barriers were breached.

Prisoner of war Werner Kraus told me later that he woke to cries of, "The Cossacks are in the town."

The Germans ran in panic, so much so that they did not even have time to destroy military supplies, and the town was taken by the cavalry guards of Lieutenant General Belov.

Preparations for the operation were as painstaking and detailed as the blow was sudden. The men put in some back-breaking work forcing their way through the thawing snow and wallowing for hours in icy water.

As usual, the advance was preceded by scouting details composed of the cream of the force. It was up to them to do away with the German field patrols and separate sentries, and pick out the best route for the artillery.

Contrary to tradition the attack was launched with-

KGUARDS*—

out preliminary artillery preparation, for the force was able to push up to the most vulnerable point of the German defenses under the cover of night and plunge into the final charge forthwith. The outcome of the battle was decided literally in 10-15 minutes, for the Germans had no time even to offer any worthwhile resistance.

Cavalry Against Tanks

To this very day we still know comparatively little of the rôle of cavalry in modern war. As a matter of fact not so long ago there were people who would smile skeptically when talk turned to the mounted branch of the service.

"Horses?" they would say with disdain. "What are they good for in this war of motors, tanks, airplanes and armored cars? These are not the times of Alexander Nevsky. . . ."

There will come a time, however, when war historians, paying tribute to the heroism of the Soviet soldier, will devote particularly inspired pages to the rôle played by the Cossacks in shattering the army of Guderian, the German "tank god." Stationed on a sector where Guderian's tank forces were operating, Belov's cavalry broke through the enemy's lines and began to press him back. All the varied weapons of a cavalry unit were put into action under the beneficent cover of night, so feared by the German tankmen. Encircling the enemy, the guardsmen on horseback and on foot drove in lightning-like hammer blows that forced the Germans out of their fortified positions and sent them reeling back.

Now the fascist air force was hurled into action to try to save the situation. As the dive bombers appeared, the cavalrymen rapidly scattered, took cover in the woods and camouflaged their prone, motionless horses with snow. The bombers swept the locality with machine-gun fire and showered down shrapnel bombs. Had the horses been stampeded by the raiders, they might have jeopardized success. But training told; and the bombs and roaring motors of the low-flying planes did not sow panic. Lying next to their horses, the cavalrymen kept up a steady fire from automatic rifles and machine guns at the attacking planes. One of them burst into flames and crashed.

"That's something new for cavalry," smiled General Belov.

By this time Soviet fighter planes appeared on the scene and the cavalry could continue pushing on. Shortly a horseman, Sergeant Krasavtsev, General Baranov's dispatch rider, who rode in at breakneck speed, his black cloak and scarlet cowl flying in the wind, reported to Belov that the object of the operation had been taken and that our units were pursuing the enemy.

"As usual, the advance was preceded by scouting details composed of the cream of the force."

We drove into the liberated city by motor car. On the way General Belov told me:

"Guderian bragged that when his troops took Yelnya the road to Moscow was open and that his tanks could go on without hindrance. I do not know what he says now, but it seems to me he has something quite different on his mind. The rout of the Germans has begun and now he has only one way open for him, and that is westward."

Cossacks March West

Today (fall, 1942), when the outcome of the spring and summer campaign is being decided on the field of battle, Soviet cavalry is pressing farther westward hard on the heels of the enemy on many sectors of the front.

I was with Belov's men when the Germans were driven out of their fortified positions at one point. The fascists were retreating so fast that our troops could hardly keep up with them. In one day they were driven back 25 kilometers. Then the Cossacks moved in and drove the Germans still faster, hammering blow after blow at them. This irresistible cavalry drive which gave the fascists no respite sent them 100 kilometers farther back.

At another sector of the front the enemy cut Soviet communication lines in an effort to hinder our attack. Belov's cavalry was sent to eliminate the menace. By a deep flanking movement it encircled the enemy. Striking from the rear, the Soviet cavalry force cut the Germans off in seven inhabited points and all of the Nazi troops were either killed in action or taken prisoner.

Today General Belov's cavalry guards are continuing to fight their way westward.

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*Reprinted from *Moscow News*.

RED CAVALRY*

Present successes of Red Army cavalry are the results of years of strategic planning and training under the command of brilliant leaders who know how to use it.

GERMAN military literature has been proclaiming the resurrection of cavalry for some time now. Leading German military experts—General Brandt, General von Kochenhausen, and General Poseck—and the *"Militar-Wochenblatt"* itself are never tired of declaring that the epoch of motorization can and must resuscitate that honorable arm. Two conditions are put forward for the use of cavalry in modern warfare:

Cavalry must be used in great masses and not in small formations.

Cavalry must be equipped with the latest weapons of modern warfare, and trained to coöperate in particular with tanks.

This German army thesis has been developed from the daily practice of the Red Army. What German military experts recommend in theory has been put into practice by the Red Army. In the civil war, cavalry played a big rôle. Budyenny, the Red cavalry leader during the civil war and later their Inspector-General, writes:

"Throughout the whole civil war two characteristic tendencies were observable in the use of the cavalry arm:

(1) an effort to use cavalry in masses; and
(2) the use of strategic cavalry for decisive aims."[1]

Cavalry is one of the most important offensive weapons of the Red Army. One can say, in fact, that today the Red Army has a monopoly of the mass use of cavalry under conditions of modern warfare. With its 34 Cavalry Divisions in peacetime, with 2 to 3 Brigades of 2 Regiments each, Soviet cavalry is stronger than the cavalry of Germany, France, Poland, Italy and Japan together. Whereas in the West—in Great Britain and France—cavalry is well on the way to being completely unhorsed and turned into lightly motorized formations, massed cavalry remains in full existence in the Red Army, and it retains its own special tasks. Whereas in Poland, which has the second strongest cavalry army in

*EDITOR'S NOTE: *This article is reprinted from a chapter of* Military Strength of the Powers, *published in the spring of 1939 under the* nom de plume, *"Max Werner," and translated by Edward Fitzgerald.*

It not only describes Red Army cavalry as it is being used today, but emphasizes (as does General Gorodovikov's article on page 18) that today's Soviet cavalry tactics and weapons have been carefully developed in active coöperation with Red Army mechanization.

As a foreword to the book, the publishers stated, "The author of this book is a noted military authority who cannot use his own name because of the possible reflection on relatives in his native land."

At the time that the book was published, it was dubbed by many as "propaganda." Already, however, time and events have more than once vindicated the author. In October, 1939, The CAVALRY JOURNAL *reprinted the chapter, "Poland Between Two Camps," which was such an accurate description of what actually happened that it might have been written after the fall of Poland rather than in the spring of 1939.*

[1]Budyenny, "Red Cavalry," in the *Bolshevist*, No. 4, 1935, p. 38.

Europe, cavalry represents a substitute for motorization, in the Red Army it represents a *supplementary arm for use with motorized units.*

Red cavalry has a double purpose:

It is used as an independent arm for offensive purposes, and in this case it is used as the core of the troops with which it coöperates. Field Service Regulations 1934 declare:

"Strategic cavalry, with its considerable strength in arms and technical equipment (machine-guns, artillery, tanks, armored cars, and airplanes), is well able to carry out various tasks in battle (attack, defense, reconnaissance, raids) independently."

This idea has been expressed still more clearly in Soviet military literature:

"In future wars cavalry will be given very responsible tasks to perform. Cavalry formations, strongly supported by airplanes, tanks and armored cars will have operative-strategic tasks to perform; wide encirclement of the enemy, and the capture of his most important strategic, economic and political centers—as well as tactical tasks; the final disorganization and destruction of retreating and defeated enemy troops."[2]

This was the case when the army of Deniken was destroyed in the civil war, and it was also the case during the Russo-Polish War when the chief forces of the Red Army on the Southwest front consisted of cavalry supplemented by weak infantry formations, and of course, at that time, on a low technical level. Today the Red Army has much greater masses of cavalry ready for action, and they are equipped with the last word in military technique. Such masses of cavalry represent a very powerful offensive weapon in the territorial conditions of eastern Europe. The prominent Soviet military theoretician, Svietshin, points out very correctly:

"Cavalry has not an intrinsic value, but one related to the territorial conditions in which the war is fought and in which cavalry will have to operate."

During the autumn maneuvers in West Russia in 1936 there was one phase of the struggle in which cavalry appeared as the core of an army, supported by tank units and airplanes, and a new combination of arms for future warfare became evident. Together with tank units and motorized infantry, the Red Army has powerful cavalry formations, a highly mobile weapon for an offensive blow or for maneuvering.

At the same time, cavalry in the Red Army is trained to coöperate closely with tanks, and it has its place in the decisive operations of the powerful mechanized units. It is the task of cavalry to follow up tank attacks, to occupy captured territory and mop up isolated enemy posts. It must never offer a good mark to the enemy. It must be highly mobile and be used against the manpower of the enemy, whilst the tanks are destroying his fire concentration. In such a combination of arms the operation of pursuit can be carried out rapidly and with all energy, and the exploitation of successes can be carried out at top speed.

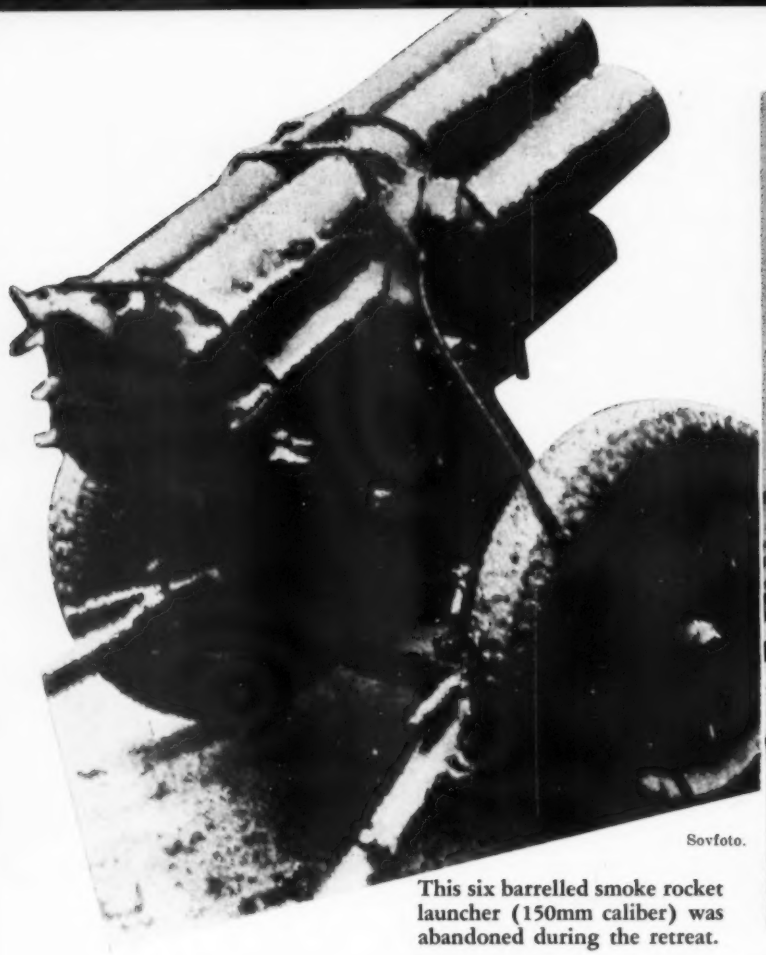
The Soviet commander, Krivoshein, writes as follows in a book that, when translated into German, created a sensation in German military circles, which regard it as a pioneering effort in the tactics of modern warfare:

"Just as for cavalry, the pursuit of a defeated enemy is one of the most fruitful tasks of mechanized troops. The great mobility of cavalry is supplemented by the impetus and maneuvering capacity of the tanks, and therefore a mixed formation of cavalry and mechanized troops represents a very effective instrument of pursuit."

The Red Army has rehabilitated the cavalry; the rider of the plains now takes his place, with modern equipment, side by side with the mechanized unit.

[2] *Voina i Revolutsia,* September-October, 1933.

A Soviet Cavalry charge on the Central Front.

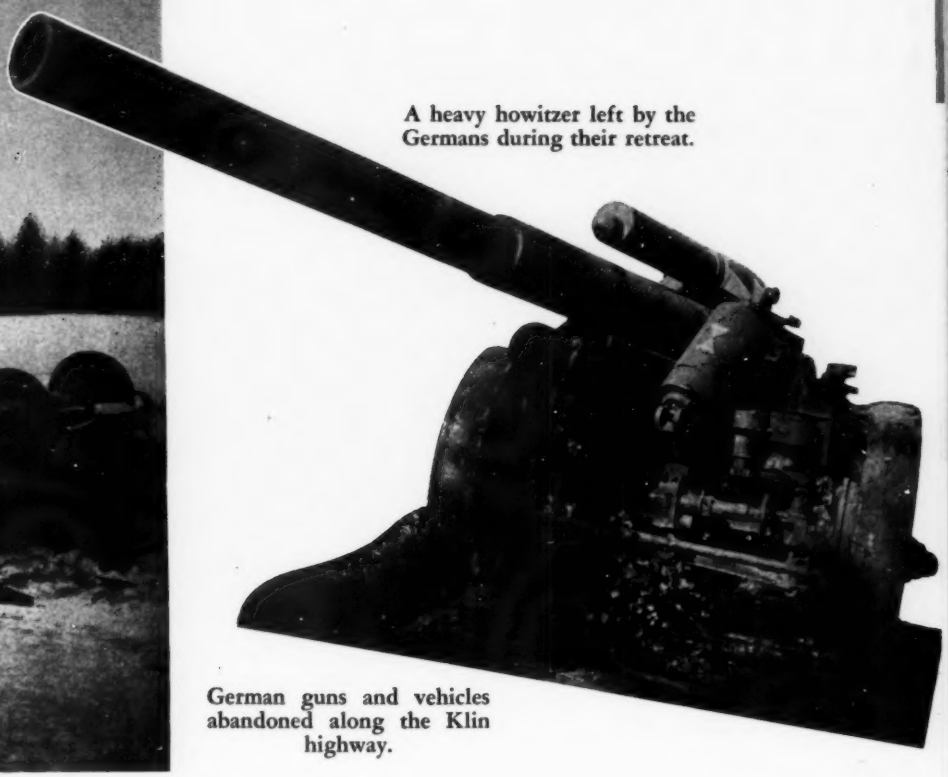


Sovfoto.

This six barrelled smoke rocket launcher (150mm caliber) was abandoned during the retreat.

Road Back from M

Men, machines, and guns have been left behind by the retreating Germans. The g a Ma in the lower left corner has been identified as a 150mm infantry howitzer. Center l mm



A heavy howitzer left by the Germans during their retreat.

German guns and vehicles abandoned along the Klin highway.

mMoscow, 1943

The g a Mark III Chassis mounting a 75mm short tank gun. A close-up of the nter l mm short tank gun and armored mount is shown in lower right corner.

This Mark III tank, captured on the Southern Front, is off to the factory for repair. It is identified as a command tank because of its two radio aerials, one looking like a railing on the rear of the tank, and the other standing out above the turret. Armament consists of one 50mm gun on the newer models and a 37mm gun on the older ones. A dummy gun helps to conceal its command function.

The captured nine-ton Mark II tank pictured above, is on its way to a Russian salvage depot. It has two independent flame-throwers, one mounted on each front track-guard. Of short range, these flame-throwers are effective only against personnel.

Editorial Comment

Successful Withdrawals

The conquered countries of Europe ceased resistance when their armies were surrounded, cut off from supplies, and unable to withdraw to new fighting positions—for any nation at war has the power to resist for only as long as its armies remain intact .

In order for an army to accomplish a successful strategic withdrawal, re-form its lines, and prepare for another stand, a well executed rear guard action must cover the retreat, prevent encirclement from the flanks, and delay the pursuing enemy. Rear guard action is a mission for which cavalry has always been considered particularly well adapted, and the record of the first three and one-half years of the Second World War emphasizes its value when properly used in this rôle.

The three most successful strategic withdrawals of the war to date have all been covered by horse cavalry.

The withdrawal of General MacArthur's American-Philippine Army into Bataan in 1942 was covered by the brilliant rear guard action of the heroic 26th Cavalry. From Bataan, no further withdrawal was possible, but four months of invaluable time had been gained.

The successful withdrawal of the Soviet armies across half of Poland and a thousand miles of Russia in 1941, and a further withdrawal to the banks of the Volga in 1942, were made possible by the well trained Red Army cavalry (which include *two mounted armies*). In both of these cases the cavalry persistently delayed the advance of the invading "armored hordes" and prevented the main Red armies from becoming encircled. Except for this, the fate of the Soviets very probably would have been that of the other countries of Europe.

That horse cavalry was employed in these major successful withdrawals, and that it was not employed in other withdrawals that became disastrous retreats, may have been mere coincidence. But the record belies this!

* * *

Red Army Cavalry

In recent months The Cavalry Journal has published a great number of dispatches and articles on the Red Army cavalry that are of sufficient significance to warrant careful analysis and comment. The fact must be borne in mind that this information is based entirely on the battle experiences of *this* war—*this modern war*, where the matériel used is the most devastating and destructive that science and manufacturing facilities can produce.

Wherein lies the reason for these successes? A brief study of the data available reveals certain indisputable facts:

1—Modern Soviet cavalry is an outgrowth of centuries of Russian cavalry tradition.

2—As early as 1919, Soviet military leaders visualized the importance in future wars of modern cavalry, used in large forces and armed with tremendous firepower.

3—Pre-war cavalry was augmented by the training of reserve divisions and corps under capable, experienced cavalry leaders. (This training was carried on in the rear areas even during the period of the Nazi advance deep into Russian territory.)

4—Red Army cavalry tactics involved the employment of cavalry both against hostile tanks and in coordination with their own armored forces.

5—*Large* units of cavalry, maintained in reserve on the various fronts, reduced long strategic and administrative marches to a minimum.

6—Higher commanders have given cavalry the definite missions and objectives, which were particularly suited for its use.

It is quite enlightening to recapitulate the dispatches and news items from communiques. Following is a partial summary of the battles in which the Red cavalry played an important, and often decisive, rôle:

Battle	*Date*	*Commanding General*
Ikva River	June 1941	General Kryuchenkin
Reub River	June 1941	General Belov
Roslav	August 1941	Colonel Kuliev
Ukraine	October 1941	General Belov
Rostov	November 1941	General Cherevichenk
Voronezh	November 1941	
Yeleto	December 1941	General Kryuchenkin
Stalinogorsk	December 1941	
Moscow	December 1941	General Belov
Ruza	December-January 1942	General Dovator
Balta	July 1942	General Belov

Moscow, Stalingrad, Rostov, Kharkov, the Caucasus—these places will go down in military history along with the names of such brilliant cavalry leaders as Timoshenko, Budyenny, Belov, Dovator, Kryuchenkin, Kirichenko, and Gorodovikov. Their visualization, training, and development of the cavalry arm over a period of the past twenty years is now paying dividends, and their exploits and employment of cavalry in this war will be studied by the future military leaders of the world.

This long-range vision of Red Army leaders is significant, for modern cavalry is an arm that cannot be trained in a short time.

From Our Readers

Editor's Note: Lieutenant Colonels Engel and Cullum are both well known former cavalry officers who spent some time in the remount service before their retirement. They returned again to active duty soon after the declaration of war. Their views, expressed herein, are worthy of consideration at this time.

Dear Editor:

Glad to see how the horse is coming back in this war, and it will probably continue to do as the war progresses. I have lost my contact with our cavalry but not my contact with horses.

I have learned a great deal about horses since I left the army. Although I am still in the army, I feel that I am out of it even when on active duty and in uniform all the time.

The thing that I have learned that impresses me most is that if we expect to do well in the field, we must pay more attention to selecting our horses. They must be "easy keepers," "free goers" and "galloping types." Our daily march must be pushed up from forty to sixty miles a day, not by marching longer but by marching faster. We must use the gallop more than we do.

All this requires a horse that is raised in such a way that the volume of blood carried in the circulatory system is greater in proportion to the rest of the body. There is a great difference in this respect in horses, and it is not a question of breeding. It is a question of whether the horse is barn-raised or raised on the range or in the pastures, day and night, winter and summer.

One reason why the Russian Cavalry does so well especially in winter is the fact that their horses are range bred. They carry so much greater quantities of blood that they have energy enough not only to gallop but to keep warm in the coldest of weather. This is the one important thing that I have learned since my retirement in 1922. As this relationship of blood volume to body weight cannot be measured or seen, it is not even considered of any importance. The modern trend in horse breeding and in military horses in most armies has been away from this horse and the filling up of our armies with horses that are barn-raised. These are no good for campaign horses.

I am keeping my own horses in New Jersey on pasture winter and summer. I supplement this with a few ears of corn but when I am home I would only do this to the barn-raised thoroughbreds that cannot go through a winter without losing too much flesh on pasture alone.

This letter has been inspired by the recent issue of the Cavalry Journal and the prominence given the Russian horse cavalry. Tanks and planes are our main thought, but horses and men still play a deciding part.

Emil Engel, Lt. Colonel, QMC.

* * *

Resurrection of Saber

The January-February issue of the Journal has just come to my desk. Congratulations on its excellence, which of course includes the article that I always read first—"General Hawkins' Notes."

In the Editorial Comment you state "The Cavalry Journal, . . ., is making a desperate effort to bring to its readers the essence of lessons learned from combat."

Not only the notes on Cossack engagements, but the realistic photographs you reproduced, seem to me to point a lesson that is being overlooked in our Cavalry. I have long held the belief that we should restore the saber to our Cavalry. However, in this connection I have considered myself a theorist, as surely I could not speak from practical experience. Consequently, I have failed to comment. However, with the lessons coming from the Russian front I am convinced of one thing: *either we must change our cavalry doctrine or we must resurrect the saber.*

Again, admitting that this is theory, I will, however, hazard the following prophecy: If ever our troops engage in a mounted attack of any proportion you will hear a mighty yell go up for the saber.

As you so aptly say, "The time to learn and practice these lessons starts during unit training period." This applies to equipment as well as to tactics. As General Hawkins points out in his notes, the world should have foreseen not only the coming attack but should have been able to predict something of its nature.

Sometimes I fear, we give too much weight to public opinion in arriving at our decisions as to armament and component parts of our Armed Forces.

I give these thoughts for what they may be worth. At any rate, I greatly enjoy the Cavalry Journal and think that it is doing a bang-up job.

Grove Cullum, Lt. Colonel, QMC.

P.S. Just why I wonder, are these Russians carrying these sabers? Are they getting ready to slice bread or lance German bellies. Also, I note the rifles on their backs.

* * *

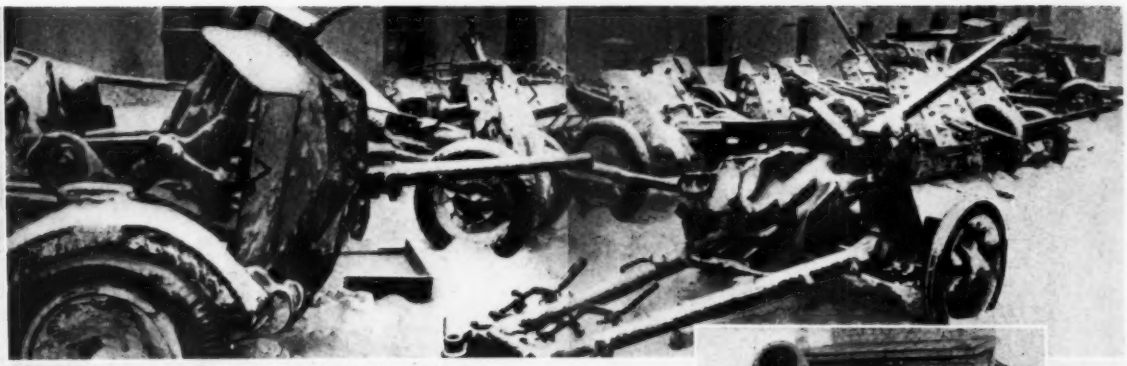
Subscription Renewals

Hereafter renewals of present subscriptions for overseas personnel of the Army to newspapers and other publications entered as second-class matter from any source will be considered as a continuation of the present subscriptions, and mailings under such renewed subscriptions are now allowed, regardless of whether or not the renewals may be paid for by others than the addressees without any request from the latter. This does not cover complimentary copies sent by publishers.

* * *

Gasoline Rationing

Now that national gasoline rationing is a reality, it is time horsemen took some stock of themselves and their horses. On every hand we hear it said that the country cannot return to the horse-and-buggy days; that



Captured German antitank guns at a salvage center near Tikhvin. The gun in the right foreground is a 50mm model and is missing a wheel at the rear of the trail. Snow conceals characteristics of some of the other pieces.

This damaged 210mm howitzer, discarded on the Klin highroad by the retreating Germans, has a range of more than 10 miles and fires a 264 pound shell. It is part of the German GHQ artillery.

Captured German Matériel

Russian Front

Bogged down in the mud is this captured 150mm heavy infantry gun. Gunners' shield is torn away and other parts are damaged. This is probably not of German manufacture, possibly a Hungarian piece. In the right background is the standard German 150mm howitzer.

Erratum

In the above picture lay-out of captured German matériel, which appeared on pages 18 and 19 of the January-February issue of *The Cavalry Journal*, two errors in identification occurred. The gun at left is 150mm howitzer. The gun in lower right corner is probably 105mm standard infantry gun. The shield has been removed and can be seen on gun in the background. This caused confusion in identification.

our whole system of economy is erected on a plan of rapid transportation; that to return to the horse would cripple our industries and retard the war effort.

All this is very true.

We will agree that horses are slow and inconvenient transportation for most business purposes. We also agree that the nation at large is hesitant to see their value so long as one automobile remains on its ragged tires for personal or private use. We can hardly blame the various business concerns for pushing the horse idea out of the way in favor of any makeshift or nebulous solution to the problem. The fact remains, the problem is at hand. Either our 14,000,000 horses will be pressed into private use or there will be no form of transportation unregulated by the government or not controlled for the war effort. Otherwise, most private citizens can retrograde to the stone age and walk, which we will all agree would be a far worse breakdown than returning to the horse.

The fortunate thing is that we have 14,000,000 horses left in this highly mechanized country of ours. As things look, it is just a toss-up that we have any at all to draw upon in this emergency. According to information widely publicized, we do not see how they can be expected to supply the anticipated demand.

It is hard to visualize our large cities filled with horses, nor do we expect to see this. We do expect to see our small towns and rural areas making 100 per cent efficient use of horses. That is where horses can best fill in the gap. We do not expect to see a return to the horse-and-buggy days simply because buggies are not being manufactured any more and there is no way to set up adequate factories. Horses will be used under saddle.

Another fortunate angle to the situation is that at present comparatively few horses are being bought for army use. This is because of emphasis being placed on mechanized warfare. Whether this is right or wrong we do not attempt to say. If horses were used in the same quantity by our armies as those of the central European governments, it would drain the best and most useful animals from stock and there would be nothing left for civilian use except the disabled and aged groups. From everything we have been able to find out, civilians in rural areas would really have something to worry about.—*Western Horseman.*

Air Support in Tunisia?*

According to Axis sources the above picture shows dive bombers attacking an Allied supply depot in North Africa. In the foreground is the gear of one of the Stukas that has already struck at its objective.

EVEN more important than inferiority in types of planes was Allied inferiority in air tactics. The Germans were able to establish air superiority over the battlefield. That was why the stukas were able to operate against the American tanks. Correspondents have brought this out, and for weeks letters arriving from American troops in action have complained about inadequate air support.

The reasons for this go far back into army organization. The basic factor is the preoccupation of the RAF and Army Air Forces with strategic bombing—the blasting of enemy bases and cities with big bombers. A powerful propaganda advanced by such men as de Seversky has gained great publicity for the strategic bombing advocates. Last week another book on the subject, *The Air Offensive Against Germany,* by Allen A. Michie, appeared. The course it advocated would practically rob Allied ground forces of the little close-support aviation they have.

The issue is whether the ground forces are going to have enough support planes to give them air superiority on the battlefield or whether the major Allied air effort is to be devoted to strategic bombing that has not yet shown any decisive results. The consequences of stressing strategic bombing were seen in Tunisia last week. When the Nazis signaled for planes, they appeared in the minimum time, and their actions were perfectly coordinated with those of the ground forces. The Germans had the organization, the liaison, and the training. The Allies did not—although in the Southwest Pacific and in the Eighth Army campaigns, Allied air-ground coördination has surpassed that of the Axis.

A blueprint of how an air force should be organized for direct intervention on the battlefield appeared in the current issue of the authoritative Command and General Staff School quarterly. It was called "What Really Is Air Coöperation?" and the author was one of the best students of contemporary tactics, Capt. F. O. Miksche. It advocated an organization very different from anything possessed by the United States or Britain. But Miksche laid down one rule which seemed to have been proved in Tunisia: "An air force in which a sharp division is drawn between fighter and bomber commands can never lend to the ground forces that total dynamic support which is necessary to victory in a modern battle."

This was criticism that applied to both the RAF and the American Air Forces. There has long been a fundamental argument between the British Army and the RAF in regard to the matter of air support. A sort of compromise was reached with formation of the so-called Army Coöperation Command, but comments of Army spokesmen have frequently been bitter on the ground forces' lack of suitable planes.

The same bug hit the American Air Forces even though they were part of the Army. The preoccupation of the air forces has not been how best to support the ground forces but how to bomb the Reich by daylight. As a result, some armored units stationed in remote parts of the British Isles conducted battle maneuvers for weeks—without any air coöperation whatever. If the same energy that went into the bombing of Italy last week had been applied to direct intervention on the Tunisian battlefield, Rommel's dive bombers would never have stayed in the sky to strike the blow that started the American retreat.

*By the Editorial Staff of *News Week*. Reprinted from *News Week*, March 1, 1943.

General Hawkins' Notes

A Few Principles for Tank Forces

EVER since the creation of the Armored Force, there has been a great need for a tactical doctrine for its employment. Of course, in the beginning, the officers assigned to mechanized forces knew no more about the actual tactical employment of such forces than did any one else. They did write a manual, but, as far as tactics were concerned, this manual contained only platitudinous generalities which were of no practical value whatever. The drill regulations, prescribing routine movements for deployment into line and ployment from line into column, were all right as far as they went. Some tactical doctrine, based on the principles of cavalry employment, were stated without the realization that any useful principles would have to be very different from cavalry principles.

It was a new arm untested in war. And although something was learned from the relatively minor use of armored forces in the Spanish campaign, those lessons were few and not always reliable. Even after the commencement of World War II, and the German *blitzkrieg* in Poland, the French, British, and United States armies failed to draw the true lessons. One lesson that should have been drawn, but was not, was that if the Germans invaded Holland, Belgium and France, as they had in Poland, the only way to stop the mechanized *blitzkrieg* was by means of numerous and very mobile antitank guns, and very numerous antitank troop units carefully trained. It should have been obvious that the French and British could not hope to oppose the Germans with as many tanks as the Germans would have at their disposal, and that a defensive campaign would have to be fought in which artillery and antitank guns of sufficient caliber would be necessary to deal with panzer divisions.

This lesson was not learned in time, and the German armored forces had no opposition. But the Russians, quietly observing the debacle, drew their own conclusions, and these conclusions proved to be correct. Even in these NOTES, attention was drawn to the correct lessons from the Polish campaign (as outlined above), but to no avail.

Now, the Russians, after two years of terrible warfare against the Germans, have learned many true lessons as to how to oppose armored forces and how to use their own. Starting with the correct idea, referred to above, they developed their own antitank means and at the same time their own armored forces. Experience has taught them the proper tactical use of their armored forces. They have learned that armored force alone cannot usually be depended upon to win battles and that there must be a combination of all forces and branches of the service. They have learned that armored force cannot be employed in the same way as cavalry, and that cavalry cannot be given the same missions as are suitable for armored forces. They make great use of cavalry but understand that the missions of cavalry and armored forces are different, though similar in some respects.

In the tactical use of their armored forces they have learned a principle that has been enunciated in these NOTES for several years. It is that tanks should not be used for head-on charges against on-coming enemy tanks except where it is impossible to avoid this. On the defensive, tanks should be used for counterattacks after our tank destroyers and artillery have crippled the enemy tanks. On the offensive, our tank destroyers and artillery supporting the infantry should protect the infantry forces from enemy tank attacks, while our armored forces are thus freed to attack the enemy main forces in flank or rear.

(Note: In our army at present, antitank guns mounted on tank chassis and designed for use particularly against tanks, are called self-propelled artillery. But whether they are called tank destroyers or antitank artillery or by any other nomenclature, I refer to them here as antitank guns.)

The CAVALRY JOURNAL has published in its last several issues some remarkable articles, written by experienced Russian officers on the tactical principles for the use of tanks as evolved or formulated from their battle experience in the war against the Germans. For convenient reference some of the principles are quoted —with some changes for brevity and clarity—as follows:

1. *A meeting engagement* is one where two forces, each hostile to the other, are moving toward each other with intention to attack, and finally meet in battle.

Success in a meeting engagement requires the gaining of time so as to ascertain the direction of the enemy's blow and make our own preparations.

The enemy blow must be delayed by launching land and air operations simultaneously.

Reconnaissance is necessary, and the best reconnaissance results are attained by fighting.

There must be a force (advance task force) assigned beforehand to accomplish both reconnaissance and delay of the enemy.

For this task, only joint air, tank, motorized and cavalry formations, correspondingly reinforced with antitank and antiaircraft means, can cope with the situation.

2. *A meeting engagement* demands swift, decisive, stubborn action. The lack of clarity regarding a situation must not delay the adoption of a decision or influence the energy with which operations are conducted by the advanced task reconnaissance and delaying force.

3. To strike a decisive blow at the enemy's task force in a *meeting engagement* between our own advanced task force and that of the enemy, time must be gained, the enemy pinned down on a definite area, and his maneuvering possibilities thus restricted. This task, including the necessary reconnaissance, must be performed by an advance group of the task force.

This group operates on a wide front and, if necessary, sacrifices itself to hold the enemy in a defined district until the main task force can launch the decisive attack in flank.

4. Experience has shown that battles between tanks are inevitable. Whenever possible, however, it is more profitable to destroy the enemy tanks by action of aviation, artillery and other antitank weapons, and leave our tanks free to operate against enemy personnel and small arms weapons.

Battles in which only tanks participate seldom, if ever, occur; therefore, combined coördinated action of all arms is imperative for victory.

5. *The rôle of aviation* in the battle against enemy mechanized forces is particularly important. As the air force can engage enemy tanks and auxiliaries at greater distances than artillery or any other force, the task of the air force is threefold. *First:* It bombs the enemy tanks in their jump-off positions, during their movement into battle, and when they concentrate at their rallying point. *Second:* Enemy mechanized auxiliaries such as gasoline trucks, munitions, field repair shops, etc., should be put out of commission. *Third:* The air force must protect our own tanks from enemy air attack.

6. In order to *first weaken* the enemy tanks with all means at our disposal (and *then* finish them off with our own tanks) artillery, including antitank guns, should engage them when they come within range and observation.

7. In *defensive operations,* the enemy usually has to be weakened by our antitank obstacles and fire in order to reduce his superiority in numbers. Counterattacks should be launched at a moment when the enemy is disorganized and before he can regroup his units for another attack.

8. A commander must be kept informed always by *all-round reconnaissance.* After a cool, cautious estimate, he must decide whether it is best to attack at once with movement, or temporarily to assume the defensive and engage the enemy with stationary fire from concealed positions. His tanks must not cruise around exposed to tank and antitank fire, but by keeping them for too long in a stationary position, he may be outflanked and caught in an enemy pincer movement.

9. In *tank pursuits,* enemy antitank traps may be set up in depth, and ruses to lure our tanks into such regions must be considered. Don't break into a village or forest without prior reconnaissance (covering detachment). Tanks should enter such places only along with infantry or in rear of it. (Cavalry would be ideal.)

10. A tank brigade fights in both attack and defense by use of maneuver, although sometimes a tank group fights defensively and temporarily in a stationary position in which trenches, camouflage, and cover are available. Whether the army is fighting a general offensive or a defensive campaign, any one unit must fight sometimes by attack and sometimes by holding defensively. In either case, tank units usually fight by attacking or counterattacking *on flanks* of enemy units. Head-on attacks against enemy tank units are usually wasteful of tanks and ineffective.

11. When infantry, supported by artillery, holds a line, tank groups should be posted behind both flanks ready to *counterattack against the flanks* of the enemy advance against our own infantry. Thus the enemy may be caught by a pincer movement either in front of our position or deep into it. If our position has *open flanks,* however, these flanks must be guarded by prearranged artillery and antitank guns.

12. When a group of tanks moves out to attack or counterattack the enemy, either in flank or elsewhere, it must always be preceded by a *covering detachment* until the enemy is in plain sight. Also, it must have *combat patrols* on its flanks and rear at all times during the movement and throughout the action. This is in addition to the all-round reconnaissance for information about the enemy's strength and movements so necessary during all operations.

13. When the enemy attacks with tanks, and we counterattack with tanks, he will attempt to hold us with fire in front and then pass a large force of tanks around the flank of our counterattacking tanks, so as to catch us unprepared or by surprise on our flanks and rear. We must avoid this surprise by careful operations of our combat patrols. When his tactics become apparent, we must in our turn attempt to hold his frontal attacks by tank and antitank fire from a holding force of our own. This holding force then attempts to withdraw in such a way as to lead the pursuing enemy main tank forces into an ambush prepared by our retiring main tank forces, which had previously advanced to the counterattack and been stopped by the enemy fire, and which have now retired to lay the ambush.

When the enemy tanks have been lured into this ambush, our tanks may open fire on their flank, or advance at full speed to attack the enemy flank by fire and shock.

Thus, it is a question of outmaneuvering the enemy. It is always a matter of *seeking the enemy flanks.* When he attempts to outflank us, we outflank him. Only by getting timely information from our constantly oper-

ating combat patrols and strong reconnoitering patrols can we hope to do this.

14. When the enemy has superiority in tanks, counterattacks by our tanks must be avoided, as in such a case it is best to use tanks for operations from ambush.

15. Antitank troops must be everywhere—with infantry, with cavalry, with artillery, with tanks. Otherwise, our armored forces will have to remain with other ground forces to protect them from enemy tanks, and our tank forces will have to meet enemy tanks head-on before our tanks can maneuver for attack on his flanks.

Summary

a. *Reconnaissance*. Strong task forces of all mobile units—tanks, cavalry, motorized artillery—are sent to gain information of the enemy and fight for it if necessary. These task forces also delay the enemy advance in order to gain time for our maneuver against his flanks.

b. *Security*. All-around security must be provided by use of covering forces and combat patrols. This applies to all separated forces.

c. *Flanks*. Seek the enemy flanks in all tank battles.

d. Avoid head-on collisions.

e. *Light holding forces*, supplied with mobile artillery and antitank guns, meet the assault of enemy tanks and enable our main tank forces to attack enemy tanks in flank; or the light forces in front make a show of resistance and then fall back so as to lead the enemy tanks into a trap or ambush.

f. Do not counterattack with tanks against superior numbers of enemy tanks; instead, delay and draw them into ambush.

g. Antitank troops must be everywhere. Some antitank guns must be with every unit the size of a regiment, but the mass of these guns must be incorporated in mobile antitank units held somewhat in the rear of the first line units but ready to be sent to points most threatened by enemy armored forces.

German Self-Propelled 75mm

This photo, received from neutral sources shows an 8-wheeled German armored vehicle moving toward the front in Tunisia. It is minus the usual 20mm gun turret and has been rearmed as a motor gun carriage (probably a 75mm tank gun). This is a very fast car. Tops 50 m.p.h.

Organization of a Tank Attack

by Captain A. Bandik, Red Army

PRELIMINARY RECONNAISSANCE

1ST ECHELON—*Heavy tanks attack first line and uncover hostile defense.*

2ND ECHELON—*Tanks with tank-borne troops consolidate position.*

3RD ECHELON—*More heavily armed tank-borne troops attack flank and rear—start pursuit.*

ON a certain sector of the front, our troops recently smashed an extremely well prepared German defense system. The enemy had made the most of the terrain. They held the village of Yulayevo, situated on a height from which they could shell the river and the valley in both eastern and southern directions.

A church on the village outskirts served as a firing position and an observation point. It bristled with machine guns and antitank guns. In the southeastern corner of the village there were four firing points with both machine guns and artillery, and at least three bunkers. The place was garrisoned by an infantry regiment.

The right flank was protected by a powerful system of bunkers disposed on slopes running southeast to northwest. South of these and easily visible from the eastern bank of the river was a powerful defense area consisting of a series of mine fields and barbed wire entanglements three or four rows deep, that protected Karpovka.

The enemy had another stronghold in the village of Popovo, from which he could also observe and keep the eastern river bank under flank fire. But there were fewer firing positions in Popovo than in Yulayevo. Entanglements two or three rows deep had been laid on the approaches.

The bunkers and firing positions in this defense zone formed a system of stratified fire that was echeloned in depth. There was also a powerful zone of fire before the perimeter of the defenses. Obstacles were arranged

These "KV" 42-ton tanks with a 76mm (3-inch) gun, are used as a shock force in attack. This is probably the type referred to in this article as the "first echelon of attack."

The tank at left is a 42-ton "heavy" tank used for assault. The tank at right is a 25-ton T-34 "medium" used by the second and third echelons. They both carry 76mm guns. The principal differences are in armor and speed.

to correspond with the fire system. Every bunker group formed a support point.

The enemy attached particular importance to this defense system, since its capture would enable our troops to penetrate to the rear of a very strong German grouping. The defenses were situated on the flank of our spear-head troops, which enabled us to conduct flank fire on advancing German units.

Our infantry commander decided to start to destroy one key resistance center that had four groups of bunkers. He estimated that if we succeeded in this the success of our attack would be assured. A tank unit was given the job. Rifle units were to go into action with them as tank-borne troops and attacking groups.

Our reconnaissance the day before the attack, gave the tank commander the fullest information about the outline of the German defense perimeter, and about the positions of the bunkers in the populated points in the direction from which he would be attacking.

He also had complete details about natural and artificial barriers which were not visible from our observation point. The tank troops were fully informed about the position of both our own and the enemy's minefields. They knew exactly where all the openings were, their width and how they were marked.

The unit commander personally saw that the infantrymen, tank-borne troops and tankmen had fully coördinated their plans, particularly in regard to targets. Special attention was paid to support for the tanks, as the commander foresaw that the Germans might suddenly open fire from some woods west of Yulayevo.

In preparation for the attack, the Soviet troops built models of bunkers with various arrangements of embrasures. On these our tank-borne troops practiced the technique of blocking and destroying. Each attacking party consisted of ten men and a tank.

The tank crew knew exactly to which bunkers and embrasures they should direct their fire; each tank-borne soldier, as he was carried towards the target, had a clear mental picture of the dugout or embrasure into which he had to throw his grenade. Tank-borne troops and tank crews agreed on an exchange of signals to warn the machines to cease fire at the moment when the tank-borne soldiers went into the attack.

It was decided that the battle order of the tanks should consist of three echelons. The first was to advance in deployed formation followed by some infantry with guns to support the tanks; the second echelon was to advance at an angle, the third in rows to the right.

The commander calculated on simultaneous destruction of the first and second line of bunkers. Each echelon had a definite task and an objective to attack, but at the same time each was expected to follow up and develop the successes of the echelon that had gone ahead.

The first echelon consisted of heavy tanks. Its purpose was largely for probing, and it was supported by artillery which, from the moment the tanks left their starting point, plastered the forward bunkers. At later stages of the operation this artillery fire was switched over to support one or the other echelon, at signals from the tank commander.

The second echelon followed the first at a distance of 500 yards, and carried the tank-borne troops. Its task was to destroy any antitank guns that the first echelon might have uncovered in the depth of the defenses, and then to attack the bunkers.

The tank-borne troops were armed with heavy and light machine guns and antitank rifles, grenades and fire bottles. This second echelon was divided into three groups, and each had the task of destroying one bunker.

The third echelon was similar to the second in composition and purpose. It had to develop the progress made by the second echelon and attack the next line of bunkers. If the enemy began to retreat, it was the job of the third echelon to begin pursuit, either at the commander's signal or on its own initiative.

Some of the riflemen were to go into the attack from the starting point, directly after the first echelon. Their action was to support and consolidate the successes of the second and third echelons.

The machines in the first echelon advanced simultaneously from the starting points. The supporting artillery opened fire on the first line of bunkers. When they reached this first line, tanks, rifle units and supporting guns opened fire on the antitank guns, the positions of which had been discovered during the advance of the first echelon of heavy tanks.

The less heavily armed tank-borne troops of the second echelon alighted between 200 and 300 yards from the first line of bunkers. The tanks did not halt, but slowed down to allow the men to jump off. They maintained fire at the embrasures of the bunkers that the troops were attacking and at firing points on the flanks which interfered with the attackers. The tanks carrying the more heavily armed troops halted for half a minute behind cover.

When the first echelon had advanced to between 100 and 150 yards of the first line of bunkers, the commander signalled to the artillery to transfer its fire to the second line of bunkers, for which the third echelon of tanks was heading.

The third echelon followed the second at a distance of half a mile. While the third echelon was attacking the second line of bunkers the attacking infantry reached the first line and consolidated the success of the second tank echelon. The second echelon quickly regrouped for a further advance, and moved on the third line of bunkers, where the first echelon had completed its task.

Between 30 and 35 minutes after the opening of the attack the second echelon was already at the approaches to the third line of bunkers, and smashing at the embrasures. Then the tank-borne troops, applying the technique they had patiently acquired in mimic attacks on dummy objectives, rushed the bunkers and showered grenades on them. The bunkers in the other lines were all wiped out.

These consecutive blows by our tank echelons smashed the whole system of German defenses. Over 40 bunkers, dugouts and other firing positions were destroyed. This operation cost our tank unit only one machine.

Fire from Moving Tanks

A GROUP of Soviet tanks dashed out of concealment and trained their guns on bushes where Nazi antitank guns and tank destroyers were ambushed. Volley after volley, cannon and machine gun fire demoralized Nazis and a large part of their antitank guns were silenced. The Soviet tanks continued to press forward at top speed against German defenses and thus greatly facilitated the advance of the Soviet infantry.

Fire from moving tanks proved itself extremely effective. Simultaneous fire from several moving tanks usually silences the enemy guns. Although their isolated antitank centers survive, they do not constitute a vital danger, for a lone gun has little chance of hitting a rapidly moving machine.

In this particular engagement, machines kept up steady fire and emerged unscathed although the German guns were in constant action. In addition, the rapid movement cut to a minimum the losses of infantry mounted on the tanks.

Results are never so effective when tanks halt for fire even if for only a few moments. This enables the enemy to range tanks and inflict telling losses.

Fire from moving tanks is particularly important in woods. Shrapnel from tank guns destroys the enemy snipers and antitank ambushes. Combing woods with shrapnel fire for a wide safe passage for the rifle units that follow the tanks, tends to paralyze the enemy small caliber guns and prevent them from cutting the Soviet infantry away from the tanks.

Moving ahead, the Soviet tanks brought their guns to play on all bushes, shell craters and hillocks—in fact on every spot where the enemy was likely to conceal his forces.

Fire from moving tanks is the most effective method against the enemy manpower and equipment. It requires well thought out preparations. Actual fighting experience shows that this method by no means is less effective than fire from a stationary tank. Targets are beforehand divided among tank crews so that each machine can concentrate on a definite objective selected by the infantry. Very often Soviet tanks set guns in motion as soon as they leave the attack positions, for targets are determined beforehand and all suspicious spots in the enemy line chartered.

Fire from moving tanks naturally requires high skill and training of the crews. In particular, this method requires that gears be shifted; then gun fire does not affect the tanks' movement.

Winter Attack By Small Units

*by Captain Shumilov**

WINTER sets its mark on every kind of operation, and German tactics in winter have their own particular peculiarities.

The Germans entrench themselves in inhabited centers and refuse battle in the open. With the enemy's forces thus grouped around inhabited points and commanding heights, it is easier to penetrate behind their lines in winter, effect a sudden blow from the flanks, and make bold raids by utilizing the gaps between strongholds.

In winter small parties and ski detachments are widely used. These small units afford great assistance to infantry in forcing a breach in the enemy's defenses and in repulsing counterattacks. The best troops are selected for these detachments. Surrounding of blockhouses is carried out by three such groups in close collaboration with mortar and artillery.

The center group, whose task is to storm and blow up the enemy fire position, usually consists of from six to eight riflemen, two sappers, and two or three men armed with automatics or machine guns.

The second group attracts the attention of the enemy, exploits successes, destroys neighboring machine guns and mortars, and deals with enemy tommy gunners. The third group consolidates the successes of the first group, is responsible for the final mopping up of the blockhouses and for clearing the way for attacking units.

The attack by assault groups is usually preceded by careful preparation. Reconnaissance determines the nature and direction of fire from the blockhouses; selects areas which do not come under fire; ascertains positions of sentries, patrols, mine fields, communication trenches and slit trenches; and determines the character of neighboring fire positions in the area of the blockhouses being besieged.

Small assault groups in Lieutenant Ninesanov's unit operate very successfully. After a careful reconnaissance, a well thought out detailed plan is drawn for every operation. Runners and skiers are used for communications, and rockets and whistles for signalling. Here is an instance of operation carried out by small assault groups:

The command had ordered the unit to occupy the inhabited point of Nikitino. There were several blockhouses in front of the village which held the surrounding country under enfiladed fire and prevented the village from being entered. The commander thereupon decided to employ small assault groups to attack the blockhouses.

He put his best automatic riflemen, Kriuohovsky, Shikov, and Antonov, in charge of the groups. There were two blockhouses in the sector that they were to attack. Each had two embrasures, one directed at the flank and the other at the front. In one of the blockhouses there was a cannon and a machine gun; and in the other, two machine guns.

The Shikova group engaged one of the blockhouses on the right flank and attracted the fire of the neighboring blockhouse. During the night a bold group had crawled to within 150 or 200 meters of the German position and had opened fire on them. Fire from both blockhouses was concentrated on this group, and this is what Shikov was waiting for. He then ordered Kirpichnikov to give signal—a burst of tracers.

The second group under Krivchkovsky passed between the blockhouses, and the third group went around them on the left flank. The attack of the central group was carried out in the following manner. Two sappers went in advance, and were followed within sight by the remainder of the group.

When the sappers gave the signal that the lane had been cleared, the whole group crawled rapidly through to the rear of the blockhouses.

By this time Antonov's group had completed its flanking movement and had begun pouring volleys of fire into the embrasures at close range.

The Germans would have returned their fire; but the central group meanwhile had reached the communication trench between the two blockhouses, had burst open the door and plastered the inmates with grenades. After this blockhouse was taken, all fire was immediately directed on the other blockhouse. At a given signal, all three groups rushed it, and in a short struggle wiped out about twenty Germans and captured three machine guns and cannon.

By the capture of these two blockhouses, small groups of bold fighters laid the way open for the infantry to attack, and the inhabited point was soon captured. The success of small groups depends upon a careful detailed plan of attack and the careful training of men. A unit commander should take advantage of any lull between battles to send his troops back behind the lines to build training blockhouses and practice attacking them.

*By cable from Moscow, December 29, 1942. Courtesy, Soviet Embassy.

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25-ton fast tanks go into action.

Guard Well Your Flanks!

by Major General Tagartkiladze, Red Army

THE fate of every offensive is decided on the flanks. From the beginning to the end of an operation, the enemy's attention is riveted on the flanks of the advancing party. It is there that he seeks decisions and directs his retaliatory blows.

By counterattacks on the flanks, the enemy seeks to restore his lost positions, to cover up a break-through, to smash the battle order of the advancing party, and to cut off the advanced units from the reserves.

Continuous action against the flanks of a break-through is a typical method of flexible defense. The present war has produced quite a few examples of offensive operations which, though carefully prepared and successfully launched, have been total failures *simply because of an unexpected counter-maneuver against the flank.*

During one of the German attempts to pierce Soviet defenses in the area southwest of Stalingrad, a rather strong tank group, accompanied by a large infantry force, drove a deep wedge into the Soviet lines. But they were cut off, and the Nazi attack failed under sudden Soviet counterblows from both flanks.

Recently, under enemy pressure from the flank, one of our units was compelled to desist from developing its success. The screen, that had been left to cope with the German center of resistance on the flank of the break-through, was too weak to parry the enemy's counterattack. The Germans regained the heights that they had lost the day before, and, threatening to cut off our troops, compelled our unit to fall back to its initial positions.

The conclusion is clear. Care of the flanks should be a necessity for every advancing unit. You cannot always rely on your neighbors. Events may take a turn that will compel each unit to solve its tasks independently.

The commander of a unit that has forged ahead, is always faced with a dilemma. Should he wait for his neighbor or go ahead without heeding his flanks? Sometimes it is not so easy to solve this problem. To pierce the enemy's defenses, dislodge him from the forward edge, and then have to mark time, allows the enemy to recover from the blow. It permits him to re-form his troops, retreat to a new line and organize fresh resistance.

Such a turn of events is a disadvantage to the advancing troops. It may mean excessive losses, gradual exhaustion of one's forces, and even the complete failure of the operation. It is clear, therefore, that procrastination and pauses are enemies of an offensive.

On the other hand, to proceed with an offensive without heeding the flanks, is also fraught with grave consequences. In forging ahead, a unit easily exposes itself to the enemy's blow. Every soldier knows how sensitive the flanks are to counterattacks.

The decision should not rest somewhere between carelessness and caution, but rather in a sober appraisal of the situation and of the relative strength of both parties. Much depends on one's estimate of the possible course of enemy action. The Red army holds that one principle is valid at all times—to secure your own flanks and go boldly on.

The problem of protecting the flanks should be dealt

with before the offensive opens. The commander of an infantry division, operating in the direction of the main thrust, must decide in advance what forces he intends to use to cover his division's flanks and what reserves could be moved to the flanks to help parry the enemy's counterattacks.

Commanders of flank units should have at their disposal at least a small antitank reserve. The artillery commander should always be ready to switch divisional and attached artillery to the flanks. The route of the division's offensive requires the most detailed study, especially regarding the roads leading to the flanks of the break-through and the centers of resistance from which the enemy could deploy for a counterattack.

In order to anticipate more or less accurately the forces with which the enemy may attempt a counterblow in the depth of his defenses, the commander should also know the dispositions and strength of the enemy's tactical and operational reserves.

In calculating his shock, auxiliary, and reserve forces, the commander must assume that immediately after the forward edge of the enemy defenses has been breached, the action may shift to a considerable degree to the flanks. In this situation the division will have to combine offensive movement with defensive action. This does not mean that the piercing capacity of the troops should be weakened; on the contrary, it must continually be reinforced.

The securing of the flanks, apart from the immediate screening, is a matter for mobile forces; hence, the necessity to detail a mobile reserve before the offensive begins.

Continuous reconnaissance on the flanks is the first and indispensable condition for a commander who wishes to spare himself unpleasant surprises in the course of an offensive. Reconnaissance must be extremely varied—infantry, cavalry or tanks, and artillery; infantry or cavalry reconnoitering units sometimes need to be accompanied by artillery. The whole terrain within a range of not less than a mile and a quarter from the exposed flank should be probed carefully by patrols. That is the only way to safeguard the flanks from sudden counterthrusts.

Experience has shown that to cover the flank of an advancing division, it is expedient to detail at least one infantry battalion, reinforced with artillery, as a flank detachment. Since the enemy almost invariably counterattacks with tanks, one must place tank extermination groups on the flanks. This should include antitank guns and rifles, incendiary bottles, and grenades.

Light tanks can be used on the flanks to the best advantage because of their mobility. They are quite reliable against infantry. Tommy gunners are also very good insurance against infantry counterattacks.

In essence, flank protection should, above all, include protection from hostile tanks.

The securing of the flanks by engineer troops is another question. In situations where troops are moving, it can be effected by laying mine barriers. The commander of the flank force should always have at his disposal not less than two groups for laying mines in the direction of possible tank attacks.

As soon as the scouts detect the movement of enemy tanks on the flanks, the commander should order the mining of all approaches and give due warning to neighboring units.

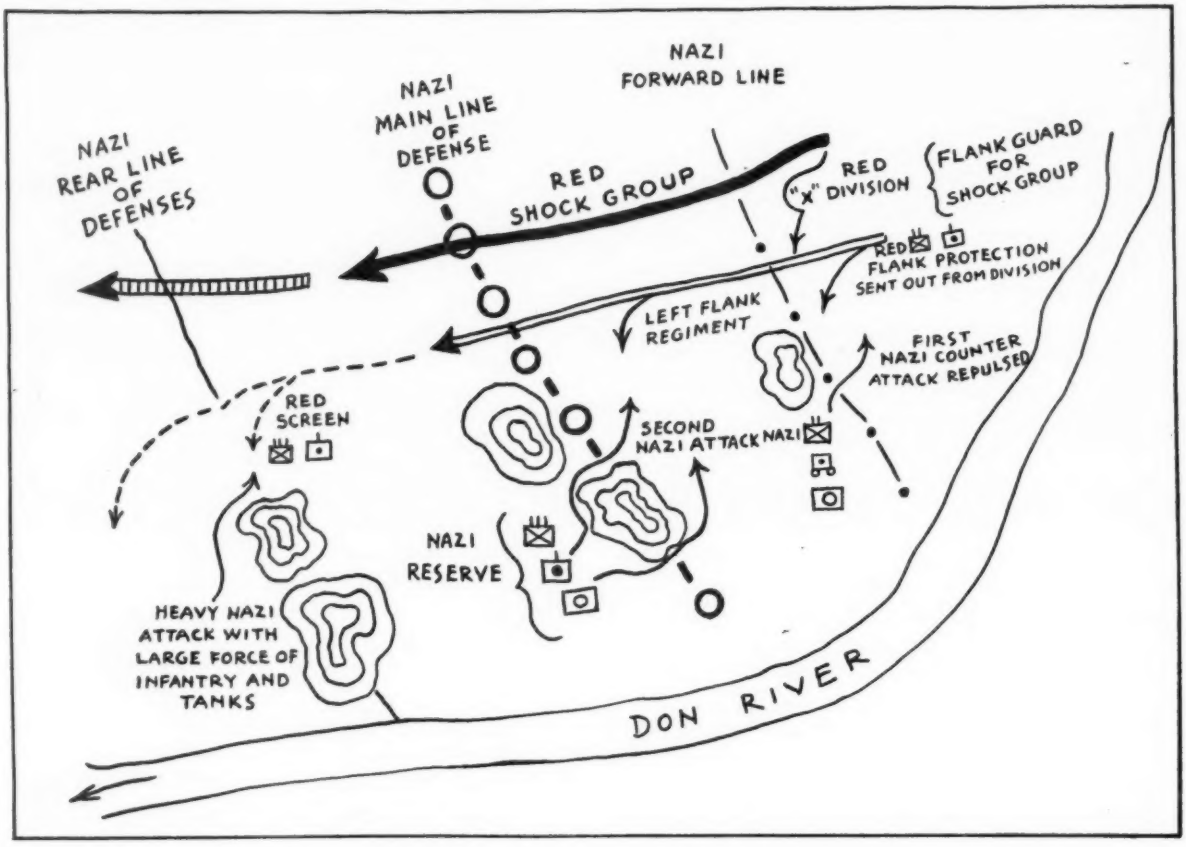
The enemy may counterattack in such strength that one battalion proves insufficient to parry the blow. It may become necessary to deploy the flank battalion and even the whole regiment. In anticipation of such a turn of events, the commander of the flank force must have with him an artillery commander and representatives of infantry companies to ensure good liaison and the rapid conveying of orders.

The divisional command post is best placed in the center. A division, advancing with exposed flanks, should move in wedge formation with its apex pointing forward. Flank regiments must be echeloned in depth with a half-turn to the left or right. Such an arrangement considerably speeds up and facilitates the deployment of the flanks for repelling the enemy's counterattacks.

Let us illustrate all of these propositions by the experience of the latest offensive operations of X Division in the Don bend. The division had the complex job of securing the left flank of a large shock group. While the main task of the division was to cover the left flank of the break-through and ensure the unhindered advance of the main forces, the problem of covering its own flank was even more urgent.

The enemy was in a position to hurl big forces against the exposed flank, so large reserves of Red army

These "Tetrarch" (British) light tanks are used largely for reconnaissance. They mount a 40mm gun and have a 7.62 Besa machine gun in turret.



troops had to be held in readiness. The Germans launched their first counterattack as soon as the division moved forward to the edge of the Nazi defenses.

The case was a typical one. A big enemy center of resistance remained on the flank of the break-through. It was obvious that the enemy would try to counterattack from there. Sure enough, over a battalion of infantry, with several tanks and gun carriers, sallied forth from the center of resistance.

Reconnoitering groups met and engaged them at a distance of two kilometers. Under cover of this action, the left flank battalion deployed, along with one battery of light guns and an antitank rifle squad. The Soviet flank proved to be protected adequately. After losing two tanks and more than a company of infantry, the Germans rolled back.

The main body of the division continued to develop its success without halting. A heavier counterblow followed when the main body passed the tactical depth of the enemy's defenses and wedged into them for over six miles. At this point, the Germans threw in an infantry reserve regiment, supported by artillery and eight tanks, and brought heavy pressure to bear on the division's whole flank.

Under cover of their own flank detachment, the whole Soviet left flank regiment deployed to repulse the counterblow. The engagement lasted for three hours, and ended in the Germans' defeat. Having accomplished its task, this flank regiment then overtook the division's main body and resumed its place in the formation.

When the division was approaching the *rear* line of defenses and was turning with its front to the east, the enemy sensed an outflanking maneuver, and again tried to cut off the division by striking at its flank.

A big center of resistance—part of the rear defense line—lay in the road of the division's offensive. Reconnaissance revealed that the fighting for this center of resistance might be protracted. In order not to immobilize its shock forces at the very beginning of the maneuver, the division screened itself from the center of resistance and cut it off from the south.

It was then that the enemy launched a countermaneuver and hurled a big tank group with infantry against the division's flank. The situation became very complicated. Regiments were in movement, and the thin screening force could be pierced easily by tanks. This menace, however, was countered by the artillery, which, together with the tank extermination groups, was moved to the flank just in time.

A mine barrier also played a useful part. Some of the enemy's tanks struck the mines and blew up. The artillery cut off the enemy's infantry from the tanks and drove them into a pincers of fire. About one battalion of enemy infantry was annihilated, and many officers and men surrendered. The engagement lasted

80 hours, but *did not effect the maneuver of the division's main forces.*

After reaching the enemy's rear, the division moved away from its neighbor on the right. This move created a gap about five miles wide. The right flank regiment detailed one battalion to cover the flank and echeloned to the right, and the division once again adopted the wedge battle formation.

In the area of one center of resistance, two German motorized infantry regiments, with strong tank support, brought heavy pressure to bear on both flanks of the Soviet division. This attack temporarily stopped the advance of the division and compelled it to take up an all-round defensive position.

The regiments deployed in a semi-circle, and the rear of the division was protected by a reinforced detachment. The artillery concentrated in the center in order to facilitate maneuvers to the flanks. The engagement fought by the right flank regiment against the enemy's motorized infantry was especially fierce. This regiment repelled several furious counterattacks and substantially wore the enemy down. He was then finally hurled back by the division reserve, and the main body continued with its freedom of movement.

Under such circumstances, passing to all-round defense was quite justified. To fall back, in order to seek contact with their neighbors, would have been the worst solution. It was necessary for the division to consolidate its positions, to protect itself reliably on all sides and, after drawing up the rest of its forces, to move forward with them.

Thus, one principle of the offensive is not to be afraid of tearing away from your neighbors. Contact and mutual support are the basis of coöperation, but the lagging behind of a neighbor is no reason to allow your flank to be exposed.

The commander should completely eliminate from his mind the very concept of the "exposed flank." Secure your flanks by a reliable force, and they cease to be exposed.

Small Arms Tactics Against Tanks

EXPERIENCE shows that the various types of weapons employed by Soviet infantrymen enable them not only to repel tank attacks, but also to strike at the enemy infantry which move behind the tanks.

An esssential condition for success is the correct organization of antitank defense in infantry units. This is how the problem is solved in certain Soviet rifle formations. On the routes menaced by tanks, special defense centers are formed, composed of antitank guns, riflemen and tank destroyer groups armed with hand-grenades and fire bottles. The antitank guns open fire before the machines come within range of rifle fire. As the tanks approach, the rifles go into action, aim at the most vulnerable spots in the enemy machines and support the fire of the antitank guns.

In the meantime the destroyer groups get ready to meet the enemy. Each group selects a particular tank for destruction, and sets it ablaze with fire bottles. The tank destroyers cover the positions of the antitank guns and riflemen and enable them to maneuver as necessary.

In some units this system of antitank defense is supplemented by mobile patrols consisting of one or two sappers armed with antitank mines, and one rifleman armed with semi-automatic rifle or submachine gun. On roads where tank movements are most likely to occur, the patrols select points to be mined. They then take up their observation post under cover.

As soon as the movement of enemy tanks is reported, the sappers swiftly lay the mines, level the ground and withdraw to cover. If the tank hits the mine and its crew tries to climb out, the rifleman goes into action and fires on the enemy tankmen. Such patrols operate for the most part between antitank fields or on sectors where the terrain permits only single tanks to penetrate.

This is one of many possible methods adopted by Soviet infantry to combat enemy tanks. The antitank rifle is an infantry weapon which has proved its worth in action. Though light in weight, it effectively pierces the armor plating of medium and light tanks.

The intrepidity and staunchness of the infantry are qualities of exceptional importance in antitank engagements. Courage and grit permit even a single fighter to accomplish much. The following incident was observed in a recent battle. A Soviet sub-division was defending an inhabited point when suddenly three German tanks broke through. The enemy had the upper hand.

Taking stock of the threatening danger, Sergeant Makarenko crept towards the tanks and hurled a bunch of hand grenades under the caterpillars of the leading machine. The tank was brought to a standstill, and its crew, not realizing immediately what had happened, opened the hatch. The sergeant leapt forward and hurled a grenade through the open hatch. There was another explosion, and the tank burst into flames.

The crew of the remaining two tanks tried to machine gun Makarenko. The sergeant ran nearly up to the tanks, so close that he was out of reach of the machine guns. This threw the Nazis into a fury. One of them opened the hatch and cocked his pistol. Makarenko replied with another grenade, which went flying through the hatch.

Two Red Army men hastened to Makarenko's assistance. Just then the third tank drove to one side and began to spray the street with fire. Makarenko took a bunch of hand grenades from the men and headed boldly for his third victim. The grenades went flying under the caterpillars. The disabled tank came to a halt, and the crew surrendered.

TANK AMBUSHES*

by Major B. Tretyakov, Red Army

A small tank unit separates the enemy tank spearhead from its infantry, breaks the tank formation into groups, and destroys them piecemeal.

RECONNAISSANCE PATROLS reported that the enemy was preparing to deliver a blow at the village of Kirillovka, situated on the outer perimeter of the Soviet defense. Faced with the necessity of strengthening defenses in that sector, the command brought a tank group up toward the village. Two hours later a message was received from an outpost which stated that enemy tanks had appeared north of the village, and the indications were that the main enemy thrust against Kirillovka would be undertaken with a force considerably superior to that of the defenders. Only stratagem of some kind could save the situation which was becoming precarious.

In the center of the defense area southeast of Kirillovka, and in front of good antitank terrain, there was a height with a marshy stream running to the south of it. The Germans had double superiority in force, but the advantages of terrain were on the side of the Soviet troops. It was decided, therefore, to set an ambush and defeat the Germans piecemeal.

A Soviet tank group was concentrated on the eastern slopes of the hill, but southwest of the hill and farther west toward Kirillovka the terrain offered no place of concealment for enemy tanks. In case of a breakthrough at Kirillovka, they would have to move over open ground under flanking fire from the Soviet tank group concealed behind the hill. The stream would have to be negotiated under fire from the antitank zone.

The Soviet infantry, holding the front line positions at Kirillovka, were to let the German tanks through and then cut off the German infantry when it tried to follow. After letting the tanks through, Soviet infantry was to mount its camouflaged antitank weapons along the southern edge of Kirillovka in order to protect its rear should the enemy tanks turn back to aid their own infantry. The tank group was to remain in concealment until after some of the enemy armored vehicles had crossed the stream, then some of the guns in the antitank zone were to open fire and lure tanks on farther. As soon as a part of the enemy tank force crossed the stream, they were to be engaged by a second defense of antitank guns, rifles, and artillery. The tank group in ambush was to drive to the top of the hill and attack those enemy tanks that had not yet crossed the stream. Thus the enemy force was to be divided into three parts and destroyed piecemeal.

At noon the enemy tank column easily broke through the front line of defense and drove at high speed towards the antitank zone. Some of the German vehicles attempted to circle around the hill where the Soviet tank group was concealed, but just then several guns and rifles opened up from the antitank zone and the enemy turned sharply toward the south again.

The main body of German tanks started across the stream after its vanguard. The second echelon slowed down and gave fire support to the first echelon. At that moment, the second line of antitank guns and field

*By cable to The CAVALRY JOURNAL from War Department, U.S.S.R., Moscow.

artillery opened up at the tanks that had crossed the stream, and at the same time the Soviet tanks in ambush directed their fire at the enemy vehicles that still remained on the northern bank. The surprise was so great that the enemy tanks scattered in confusion. Those that turned back were met by fire from the first line of antitank guns placed along Kirillovka's southern edge.

The enemy apparently could not at first determine the direction of fire. Panic spread among the enemy. Several tanks were burning, and others, crippled by Soviet shells, were standing still.

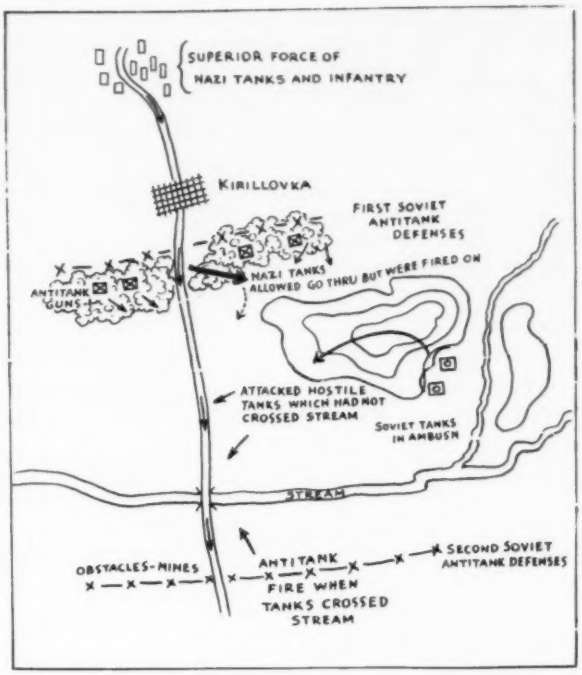
The Soviet tanks chose that moment to launch their attack. Some more enemy machines were destroyed at point blank range, and the rest turned back and fled around to the west of Kirillovka. The Soviet tank group engaged in pursuit of the enemy vehicles and then crushed and dispersed the motorized infantry which was attempting to capture Kirillovka.

While the tank group from ambush was engaging the enemy tanks to the north of the stream, fighting to the south of it had developed as follows:

When the Soviet artillery opened fire, the German tanks that had crossed the stream attempted to storm the firing points in the antitank zone but came up against antitank obstacles and mines. Several machines were blown up, and others were destroyed by antitank guns and field artillery.

Having received considerable casualties, the enemy was forced to turn back and recross the stream under a tornado of fire. Eight tanks got stuck in the stream, and members of the crews who climbed out tried to escape on foot. The tanks that succeeded in recrossing the stream were met by the fire of a tank company protecting the movement of the tank detachment that was in ambush. Only half of the enemy tanks were able to break out of the trap. German losses amounted to 56 tanks out of 120 and two battalions of motorized infantry.

The Soviet-German war has presented numerous examples of tanks operating from ambush. Well arranged ambush offers the possibility of successfully engaging a superior enemy force.


SUPERIOR FORCE OF NAZI TANKS AND INFANTRY
KIRILLOVKA
FIRST SOVIET ANTITANK DEFENSES
NAZI TANKS ALLOWED GO THRU BUT WERE FIRED ON
ANTITANK GUNS
ATTACKED HOSTILE TANKS WHICH HAD NOT CROSSED STREAM
SOVIET TANKS IN AMBUSH
STREAM
OBSTACLES-MINES
ANTITANK FIRE WHEN TANKS CROSSED STREAM
SECOND SOVIET ANTITANK DEFENSES

Ambush may include large tank formations operating in conjunction with infantry and artillery, or it may consist of small tank groups supported by submachine gunners, antitank guns and rifles.

The choice of terrain and the factor of surprise play important parts in determining the success or failure of ambush. Experience has shown that the most effective tank ambushes are ones placed on uneven ground on the fringe of a forest or else in thickets. Ambushes in forest-covered mountains were widely used during operations in the Caucasus foothills. Terrain should restrict movement of enemy armored vehicles and afford wide opportunity for the maneuver of friendly tanks.

A surprise attack always stuns the enemy. That is why ambush should always be concealed from the air as well as from land observation. Ambush early discovered is doomed to failure.

The possibility of the enemy appearing from some previously unforeseen direction should be kept always in mind.

Ambushes should be organized so as to ensure repulse of the enemy even should he appear from the rear. For this reason reconnaissance and constant observation is necessary. Tanks in ambush are wise to cooperate with other arms of the service. Antitank rifles and guns augment the firepower of the tanks. Submachine gunners protect them from enemy tank fighters, while sappers mine the terrain so that enemy tanks, in circling around minefields, will inevitably fall into the ambush.

Tanks in ambush in a lightly wooded area await attack by the enemy.

Sovfoto.

All ambushes should be organized with an advance in mind. They are used not only in defense but in other types of engagements as well. Their purpose in meeting an engagement is to hold the enemy and gain time necessary for concentration of the main body of troops.

In an offensive engagement an ambush is employed to rout the counterattacking enemy forces and sometimes to protect the threatened flanks of advancing troops. During reconnaissance in force, ambushes are also used to capture prisoners and destroy enemy scouting patrols.

In a defensive operation small tank ambushes (a company or battalion) are used to cover the retirement of the main body of troops to new positions. As a rule, small groups of tanks are placed in ambush along the most likely directions of the enemy advance (highways and defiles). These groups are located along the front or in depth at a distance from each other that is sufficient to ensure mutual fire support. Antitank guns and rifles are placed in ambush along with the tanks, and submachine gunners take up positions some 50 to 100 meters ahead. It is desirable to have approaches to every tank group and spaces between them mined.

The officer in charge of an ambush, usually a company or battalion commander, should be in constant communication with each group by wireless, light signals, or telephone. He also has the mobile tank reserve and sometimes antitank rifle reserve at his disposal. The system of fire is arranged in advance and each group is assigned a definite sector. At a signal from the command post, fire may be concentrated in any direction.

Last August Major Khoroshko, commanding a force defending the approaches to an inhabited point on the Don, arranged an ambush in the open steppe. On terrain so unfavorable to defense, the movement of vehicles may be observed at a distance of five kilometers. The major placed groups of light medium tanks along a front of from two to three kilometers and at an equal distance in depth. He then issued orders for his men to dig themselves in and camouflage. Several score medium and heavy tanks were concealed in a small grove behind these ambushes, and submachine gunners took up positions in front of the tank groups, with antitank guns placed at intervals between them.

The enemy tanks appeared in the morning, formed up, and stopped from two to three kilometers from the group of Soviet tanks in ambush. Some German tankists leaned from their hatches to observe the terrain but apparently saw nothing suspicious, for the enemy tanks, accompanied by self-propelled artillery and numerous submachine gunners, rushed to attack. The Soviet tanks and antitank guns in ambush opened a tornado of fire at a range of less than one kilometer. The enemy was caught by surprise but, unable to sight any targets, he continued to advance and kept up a desultory fire.

Sovfoto.

With no trees in which to ambush, this tank crew has dug a pit and topped the tank with brush.

After losing 62 tanks, a large amount of artillery, and several hundred officers and men, the Germans were forced to retire to their initial positions. Soviet losses were 17 tanks and 6 guns.

When enemy tanks are sighted, tanks and guns in ambush open fire at a signal given by the ambush commander, and great firmness and accuracy are needed to choose the right moment for fire. The following episode is characteristic in this respect:

A group of Soviet tanks had concealed themselves in ambush near the town of Novoe when a small group of enemy tanks soon appeared from a grove. They approached to within 800 meters of the ambushed tanks, then turned and disappeared in the grove again. The enemy repeated such sallies several times, but the ambush commander guessed the enemy's intentions and directed his men to hold fire until further orders. Noticing nothing suspicious, about 50 of the enemy tanks crawled from the grove and drove forward in close formation. The tanks in ambush opened fire at short range, destroyed about 20 tanks, and forced the enemy to fall back to his initial positions. Experience has shown that coolness, firmness, and sober thinking determine the outcome of ambush.

In some cases it may be profitable for advance ambush groups to let part of the enemy tanks get through in order to place them under crossfire of tanks located deeper in the ambush zone. Then the rest of the tanks and infantry may be cut off and the enemy routed piecemeal.

Should the enemy attempt to outflank an ambush or crush it with a large force, the commander should immediately order his mobile reserve out to meet the attack. The reserve may also be used as a decoy to lure the enemy under the fire of the tanks in ambush. For this purpose a part or whole of the reserve moves ahead of the ambush and, after engaging the enemy, falls back and draws it toward the trap.

A Soviet tank unit was moving along a valley in the Mozdok area when its vanguard reported that it had sighted an enemy tank column approaching from the opposite direction. The unit commander decided to organize an ambush and ordered the vanguard to fall back but to keep a steady lookout for the enemy. Soon another message came in, which stated that enemy advance units were turning into the neighboring valley. The commander then ordered two platoons to move ahead, open fire at the enemy, then retire, and lure the enemy towards the ambush.

At the approach of the Soviet tanks, the enemy assumed battle formation and started in pursuit. The enemy suddenly found himself under a heavy crossfire, and his forward and rear tanks became crippled first and blocked the way for the rest.

When threatened with encirclement, tanks in ambush should retreat swiftly to new positions. For this reason, tanks should be entrenched in such a manner as to afford them opportunity of slipping out easily. First to retire should be the antitank rifle detachments, followed by submachine gunners protected by tanks. Retreat of advance groups should be covered by a group situated farther inside the ambush zone, while the mobile reserve should hold up the enemy and gain the time necessary for the whole force to take up new positions. The reserve force should then lure the enemy under the fire of the tanks in the new ambush position.

The best time for retirement is at night when observation is difficult or in the daytime under cover of a thick smokescreen. In this case, it is possible to escape pursuit altogether or else mislead the enemy or even force him to engage his own troops, as did Lieutenant Semenov.

A group of tanks under Semenov's command placed themselves in ambush in a thicket along a forest through which the road cut. The enemy tanks were met by fire and rushed back into the forest. Sometime afterward one of the neighboring groups informed Semenov that two enemy tank groups were outflanking him, with the intention of making an obvious envelopment. Semenov immediately ordered fire to be opened at both flanks and, by taking advantage of the falling darkness, moved back. The enemy tanks fired back, then moved towards each other. Drawing pincers together, the enemy machines fought each other, while Lieutenant Semenov's group, which had retired, looked on.

These examples do not cover all of the problems connected with tank ambushes, nor do they touch upon ambushes organized by infantry and other arms of the service. They attempt to describe only a few of the possible tactical employments of small tank units.

These tanks, ambushed on the edge of a dense forest need less camouflage.

Salvage and Supply of Tanks in Battle*

by Lieutenant Colonel A. Afonskyk, Red Army

THE salvaging of wrecked tanks from the battlefield and the constant replenishment of their ammunition and petrol is of primary importance in the Soviet army. This work is particularly complicated under actual fighting conditions and requires special care and attention.

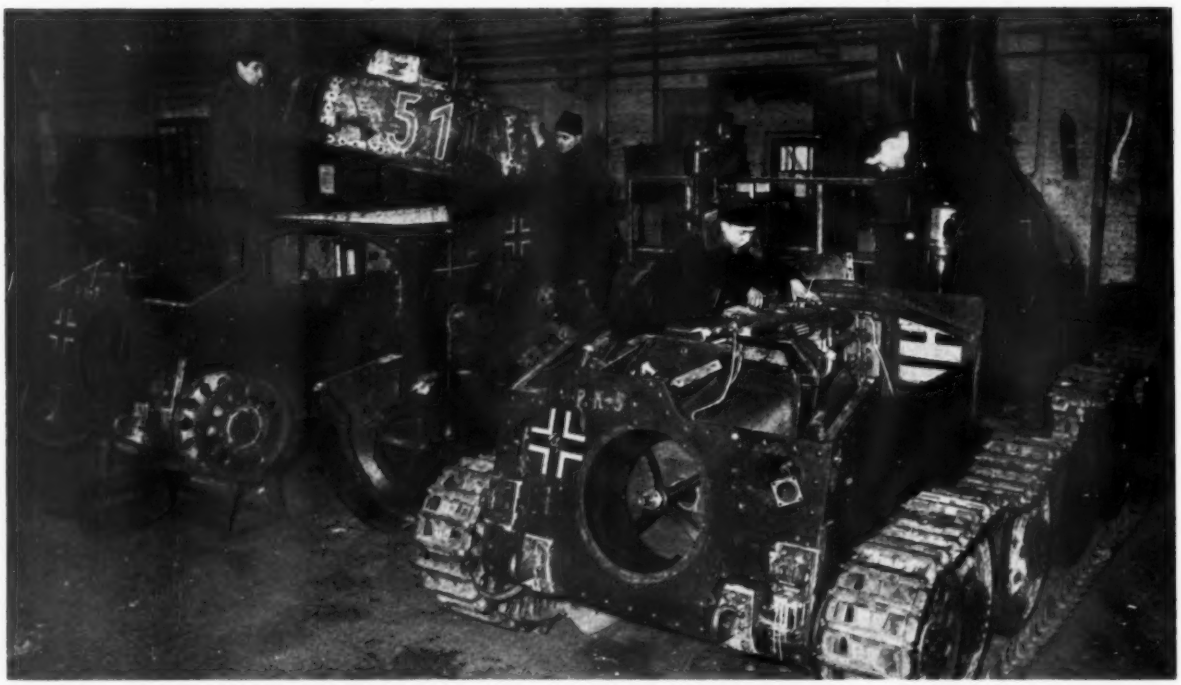
First of all, to salvage wrecked tanks and replenish ammunition and petrol, a definite plan for this purpose must be prepared at the same time that the general plan of operation is drawn up. The rear unit of the supporting tank group must contain a special salvaging group with an officer in charge. This group is responsible for the timely evacuation of wrecked machines from the battlefield and sees to the constant supply of ammunition and petrol to fighting tanks.

In addition, the general plan of operation should provide the necessary measures for this work, but the details depend upon specific conditions in each given engagement. The second in command of the group performing the operation, together with the assistant commanders of the various units, watches the movement of the tanks from an advanced observation post, stationed from one to one and a half kilometers from the actual tank formations. Contact is maintained with our posts by submachine gun groups of four or five men each.

About 600 to 800 meters behind the advanced observation post is the salvaging and supply group. This group consists of tractors, field repair units, petrol tanks, and armored haulage tractors that carry supplies and spare parts. Their job is to salvage wrecked tanks and get them to repair units, to help tank crews in repairing damaged machines on the battlefield, and to replenish ammunition and petrol supplies during the battle. The officer in charge of the salvaging and supply group maintains contact with the advanced observation point. For this purpose he is assigned several dispatch riders, and when necessary the group is reinforced by sappers and submachine gunners.

The first echelon of rear units, where the damaged machines are repaired, is located from three to four kilometers behind the salvage and supply group. The advanced observation point receives information on the

*Cabled to The CAVALRY JOURNAL by the War Department, U.S.S.R., Moscow.



Captured German tanks undergo repairs at a Soviet workshop behind the lines.

These Nazi tanks, captured in the northern sector, were repaired by Soviet salvage groups in time to go into action against their former owners.

condition of tanks from scouts who act in conjunction with the forward units. After verifying these reports, the commanding officer sends orders to the chief of the salvage and supply group who then organizes the salvage of the wrecked tanks or arranges for their repair on the battlefield. For this purpose all available tractors, and when necessary sappers and submachine gunners are used. If the tanks are to be repaired on the battlefield, he then dispatches repair gangs from the advanced field repair base. The repair gang approaches the damaged machine on foot or on an armored haulage tractor.

Experience has shown that the enemy always tries to hinder the repair of damaged tanks. For example, when approaching one damaged tank near the villages of Sharovo and Fedosino the salvage group was met by enemy submachine gun fire. One enemy submachine gunner actually fired from the wrecked tank itself, so before salvage could be started the area first had to be cleared of all Germans.

At another sector where a Soviet tank was damaged by a land mine, it was necessary to de-mine the area before salvage could be made, and a group of sappers was dispatched for this purpose.

On another occasion the commander had to ascertain the condition of the damaged tank on the battlefield. As he approached it, the enemy opened strong fire from submachine guns, and our men reached the machine only after a smoke screen had been set up.

In still another case, as the Soviet salvage group approached a damaged tank, it was met by artillery and mortar fire. Not until after Soviet artillery had retaliated by a powerful barrage and silenced the enemy guns was it possible for them to start to work.

These examples show that salvage work on the battlefield is usually rendered easier by having submachine gunners and sappers accompany the salvaging force, and in certain cases even artillery support is necessary.

Salvage must proceed throughout the battle so that by the close of the engagement, all damaged and wrecked tanks may be safely evacuated. The work involved may require several days, particularly if proper equipment is lacking or the situation in the battle area is complicated. Meanwhile, it is possible that the enemy may locate the position of the stranded tanks and direct his artillery and mortar fire against them. In such cases salvaging is usually performed at night and under cover of our artillery.

Replenishment of ammunition and petrol for tanks is carried out directly on the battlefield, because the return of tanks from the battlefield for fresh supplies often results in reducing the pace of the offensive, and sometimes the absence of tanks encourages the enemy to launch a counterattack.

In Soviet tank units, this supply work is organized as follows: The tank in need of replenishment of ammunition or fuel seeks cover, while the salvage and supply group rushes an armored haulage tractor with the necessary supplies, which are taken from the first rear echelon. As soon as the tanks have reached their objectives the first rear echelon moves up to the tank positions, and all machines receive fresh supplies.

GERMAN DEFENSES

In Woods

IN wooded areas, the German defenses conform to the pattern shown in the accompanying sketch. Near the forward edge, lanes are chopped in the form of an obtuse angle. Mines are laid in the center of the cuts; and on either side barbed wire, wooden and other obstacles are constructed. During the day the lanes are patrolled and covered by enfilade fire, but at night they are vacated while the Germans await the arrival of Soviet infantry.

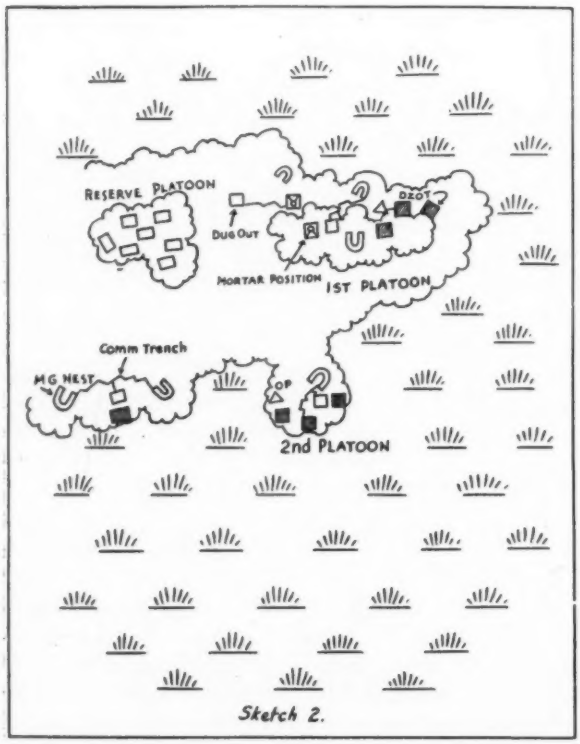
About 150 yards behind the cut is a thinly held line of infantry, and about a thousand yards farther to the rear is another stronger line of infantry. In the intervals, separated by about 50 yards, the Germans place *dzots*,[1] each armed with two automatic riflemen. Each *dzot* has individual acute-angled cuts cleared out for about 150 yards to the right and left front.

The density of the *dzots* increases toward the rear. Each is secured by cross fire from its neighbors, and all are connected by communication paths and trenches. In the event of bombardment of the forward defense zone the defenders fall back to the rear.

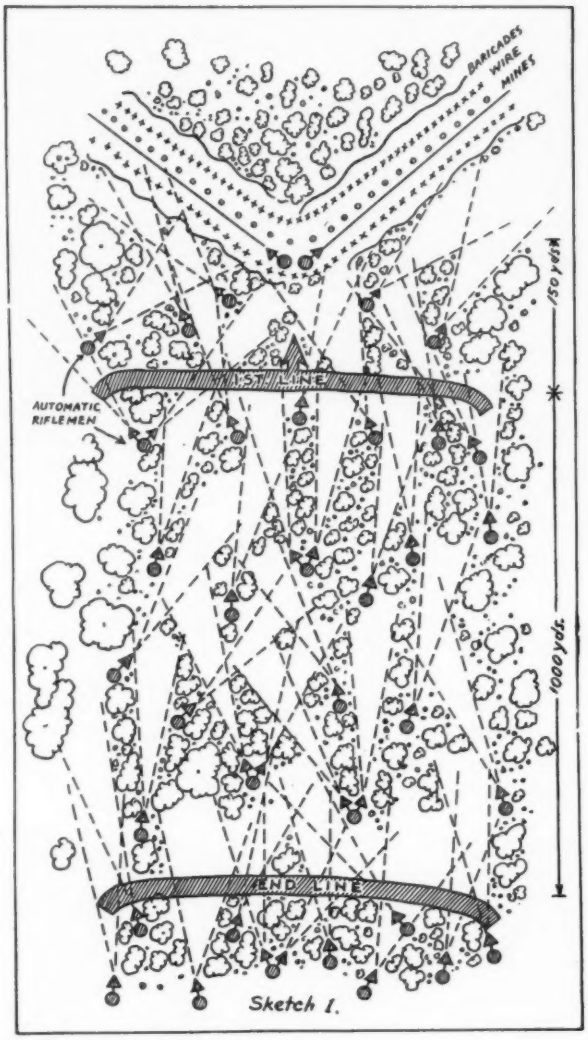
The weakness found in this type of defense is a lack of proper security against flank attacks.

★Brief of an article by Major N. Shandarayev published in *Red Star*, October 4, 1942.

[1]Firing point emplacements. The more elaborate are made of iron or wood.



Sketch 2.



Sketch 1.

In Swamps

Defense in swampy areas is conducted only on the available dry, wooded islands (see sketch). An attempt is made to connect each island, but if this is not possible, then the islands are built up and preparations are made for carrying on independent defenses.

In the accompanying sketch two platoons are defending an area of the front that runs from about 1,200 to 1,400 yards. The reserve platoon is located about 1,000 or 1,500 yards to the rear. Flank security is maintained by appropriately placed machine guns.

The German machine gun nests follow a horseshoe pattern. The bend faces the front 3 or 4 yards wide and 4 or 5 yards long. The nest usually is covered with wood and dirt. Massive all-around *dzots* are rare on the northwest front; the smaller ones with two embrasures are the rule.

The Advance and Attack of German Armored Formations in Libya, 1941-42*

by Colonel H. B. Latham, British Army

Introduction

IN connection with the handling of his armored units, there are four principles from which the Nazi rarely departs:

(1) The primary rôle of the tank is to kill infantry.

(2) The main weapon of the tank is thus the machine gun.

(3) The tank can be successful only if used in conjunction with all arms.

(4) Tanks must be used "en masse."

As a result of these views:

(1) The Nazi will not fight a tank battle if he can avoid it.

(2) The order so constantly given to our armored formations "to seek out and destroy the enemy's armor" has led to almost tragic results.

(3) Nazi tactics are based on armor always moving with other arms in close support in the form of a "box" or moving "defended locality."

Composition of the Box

The "box" is the part of the column which is inside the dotted line in diagram "B." It varies in size, but if a battalion of tanks is moving with it, it might contain the following fighting troops, in addition to the tank "ground crews," reserve petrol, etc.:

One battalion lorried infantry, usually carried in semi-tracked, semi-armored vehicles.

One battery 50mm antitank guns.

One battery 88mm AA guns.

One troop 150mm close support guns sometimes on SP mountings.

One battery field guns.

On the move or in the attack, the artillery with the "box" is disposed of as shown, *i.e.*, the antitank and AA guns guard the flanks and front faces, while the infantry guns and field guns are usually only inside the "box" when it takes up a defensive position. In size it is approximately two miles deep on a frontage of 800 yards. The 88mm, though it has proved a very effective antitank gun, is primarily included in the "box" to protect the "soft skinned" vehicles from air attack.

The Method of Advance

The method of advance is shown in diagram "A." On dead flat country the distances between the various portions of his column are approximate.

Between the reconnaissance unit and the leading echelon of tanks, 5-10 miles.

Between the 1st and 2d echelons of tanks, 1 mile.

*Courtesy, *R. A. Journal* (British).

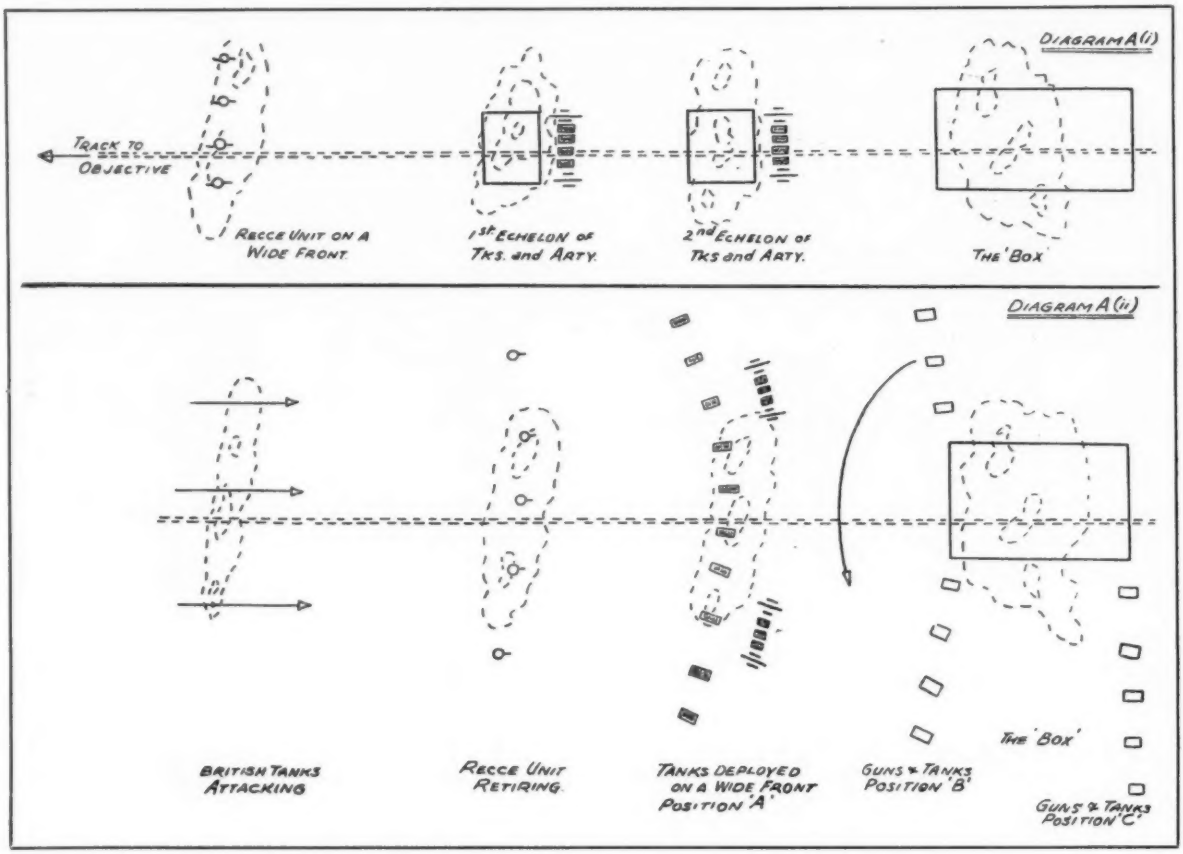


DIAGRAM A(i)
TRACK TO OBJECTIVE
RECCE UNIT ON A WIDE FRONT
1st ECHELON OF TKS. and ARTY.
2nd ECHELON OF TKS and ARTY.
THE 'BOX'
DIAGRAM A(ii)
BRITISH TANKS ATTACKING
RECCE UNIT RETIRING.
TANKS DEPLOYED ON A WIDE FRONT POSITION 'A'
GUNS & TANKS POSITION 'B'
THE 'BOX'
GUNS & TANKS POSITION 'C'

Between the 2d echelon of tanks and the "box," 2 miles.

The whole is directed towards some tactical feature which, if seized, will force us to fight and so engage on ground of the Germans' own choosing.

In normal terrain each portion of the German column moves from high ground to high ground, and the more rearward echelons of the column step up rather like the old cavalry advanced guard. Each echelon of tanks is supported by field artillery, which moves in the rear of them.

Method of Fighting If Attacked On the Move

As soon as our tanks are reported to be advancing, the "box" halts and takes up a position for all-round defense. This can be done very quickly owing to its formation on the move. As our tanks advance, the Nazi reconnaissance unit falls back, and their two echelons of tanks deploy on a wide front, with the flanks thrown forward; position A, diagram A.

If we continue to advance, the Nazis continue the retirement to position B and force us to attempt to break through one flank.

If we imagine that we decide to attack the Nazi left flank, this falls back to position C. Then our tanks, if they pursue, are not only engaged frontally by his Mk. IV tanks but are caught in flank by the antitank and AA guns of the left face of his "box." Finally, the tanks of the hostile right flank swing around and engage our attack in the rear.

The artillery, which moves with the tanks in the advance, may either remain supporting them or enter the "box" to stiffen its antitank layout.

The Attack Led By Tanks Against a Locality (Diagram B.)

In general the Nazi accepts our reconnaissance of the ground and aims at taking one of our localities. He realizes that it is usually impossible for an attack in depth to pass between two localities or to cross the front of one locality to attack another. His attack is launched, therefore, approximately "head on."

Such an attack might thus be carried out in the following way:

Phase 1. He will reinforce his reconnaissance unit with tanks deployed on a wide front and drive in our covering force, until he is approximately 2,500 yards from our "Crust."

Phase 2. A most careful reconnaissance will then be carried out by a senior commander in a tank to decide which locality to attack. In Libya last winter when our localities were not necessarily sited on high ground, a great deal depended on whether the Nazis could get a position about 2,000 yards from our front face on which to deploy his covering force. In diagram "B" it

is assumed that he has found this and is going to attack locality "B."

Phase 3. His covering force now deploys as follows:

Mk. IV tanks take up a hull down position on the ridge and with the fire of their machine guns attempt to pin the defense. They may engage visible antitank guns with their 75mm.

Under cover of their fire 50mm antitank guns, heavy machine guns, and close support 150mm infantry guns are also deployed in an attempt to knock out the antitank guns of the defense or to kill their detachments.

It should be noted that in the British Army, since the Vickers machine gun has been withdrawn, there is no means of engaging the heavy machine guns opposed to us except by the fire of field artillery. The majority of the weapons deployed by the German covering force are dependent on open sight laying and so can be blinded by smoke.

Under cover of the fire of his own covering force, the attack forms in rear thus:

(1) Three rows of tanks about 50 yards apart and each row approximately 150 yards in rear of the one in front.

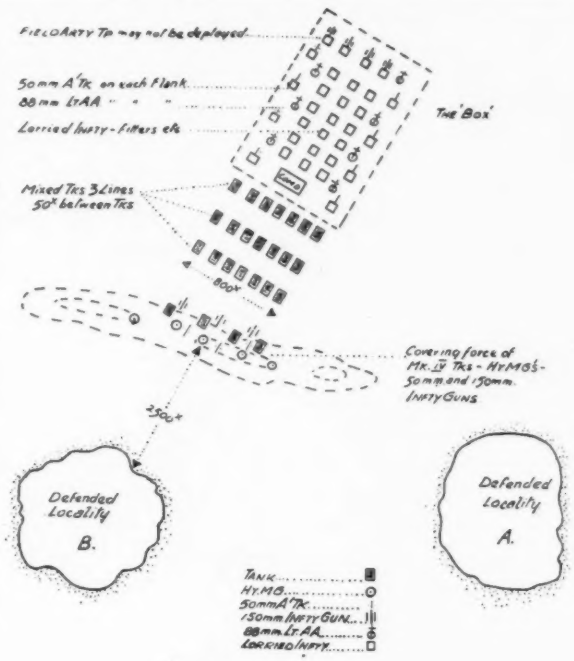
(2) When the tanks are in position, the "box" forms up in rear as shown; the infantry all ride in their trucks.

Phase 4. At zero hour, the whole moves forward at about 15 m.p.h.; the rate of speed depends on the ground. As they pass through their covering force, the tanks begin to fire, not so much with a view to hitting anything but simply to have a psychological effect.

On arrival at locality "B" some tanks drive straight through to the rear face; others assist their infantry to mop up.

The latter do not usually dismount till they arrive in the locality, when they fan out and use tommy guns extensively.

Phase 5. When the attack is successful, the covering force moves forward into the captured locality to stiffen the defense, and the tanks are usually withdrawn and serviced near what has now become the rear face of his locality.


FIELD ARTY To may not be deployed
50mm A/Tk on each Flank
88mm Lt AA " " "
Carried Infty - Pioneers etc
THE 'BOX'
Mixed Tks 3 Lines 50x between Tks
BOOT
Covering force of Mk. IV Tks - Hy MGs - 50mm and 150mm Infty Guns
250x
Defended Locality B.
Defended Locality A.
TANK
Hy. MG
50mm A/Tk
150mm Infty Gun
88mm Lt AA
Carried Infty

(DIAGRAM B)

Generally

(a) It takes two or three hours to prepare and stage such an attack.

(b) If successful, no minor counterattack is likely to drive him out. His defense can be organized very rapidly, since all the weapons he requires are immediately available.

(c) As a result of such tactics, our localities have had to be sited on higher ground, and it has been necessary to avoid ground from which they can be overlooked.

(d) Such attacks are now beaten off, and it is apparent that in future they will not succeed without much more artillery support.

(e) The whole form of the attack has been reduced by the Germans to a "Battle Drill."

The Commander

The commander must guess whether, after receiving the initial blows, the core of the opponent's Army is gradually becoming condensed, tempered and strengthened, or, to the contrary, beginning to crumble into dust like a decanter made of Bologna glass whose surface has been cracked. The commander must figure out with precision how much the enemy state will be weakened by the loss of certain sources of supply and by the disconnection of certain arteries. He must foretell without mistake whether the enemy will collapse in pain from the wounds inflicted on him, or hurl himself forward with frenzied might like a wounded and enraged bull.—General Carl von Clausewitz.

Germans Train "Anti-Commandos"

(Recent German Training Instructions)

THE enemy (Allied) commando attack on Heraklion Aerodrome on the night of June 13-14, 1942—an exceptionally dark night during the period of the new moon—demonstrated that the enemy's specially trained sabotage troops are too good for our defenses.

It is essential to standardize and to improve the method of defense against commando raids.

Intelligence sources are unanimous in maintaining that the English and the Fighting French, probably also the Americans and Russians, have formed with their "Commandos" a new sort of troops—even indeed a new arm of the service. It consists ideally of personnel especially suited by their profession (acrobats, boxers, etc.) who have been given a thorough and systematic special training, and armed with special equipment for sabotage and raids. In several instances they have scored successes over our own troops in their present state of training and equipment. The success of the attack on Heraklion Aerodrome is also proof that the instruction of our troops concerning the enemy's methods of attack, and repeated warnings of imminent danger, are not sufficient to ensure a successful defense. In fact, an accumulation of repeated warnings of imminent danger has a detrimental effect.

The methods of attack of these enemy troops are varied and for the most part novel. Examples:

(a) The Italian Siena Division, which is under German command, received the following report through Italian military channels:

"Some time ago English parachutists landed near Prague. When they were held up by the local police, they obeyed the order 'Hands up!' But they carried a special device on their belts, with a pistol, from which cords ran to their hands. The latter fired the pistol. They thus succeeded by a quick and appropriate movement in accounting for the policemen."

(b) During the attack on Fuka Aerodrome (Africa), according to a report from *X Fliegerkorps*, the enemy troops put up distress signals. They succeeded in enticing the sentries away from their posts for a time, and successfully carried out their sabotage.

(c) Before the attack on Heraklion Aerodrome, an aircraft crew noticed six men of a Commando lying close together on the grass. It was already very dark, and the airmen shone a pocket torch on them from one yard's distance. When questioned, they pretended they were soldiers resting. One of them gave a sort of annoyed grunt, a clever and self-possessed indication that he did not want to be disturbed. The trick succeeded.

This special training of the enemy contrasts with the state of training on our side, which is in some ways no longer adequate, and is no longer competent to deal with enemy commando raids.

New *methods and weapons* of attack demand *new forms* of defense. The following are suggestions for such new defense methods. They fall under three headings:

Equipment

The equipment of the troops must be suited to a special degree for *use by night*. First on the list comes the demand for completely silent behavior even in difficult country. Rubber shoes or rubber soles, overshoes, or stockings pulled over, must be developed. Every part of the man's equipment which hinders him physically must be left out. A combination suit is better than a coat, with belt, trousers and jackboots. *Every man* must be equipped with a flashlamp and a Verey pistol. Long-burning Verey cartridges (perhaps with a parachute) are required. At night, a pistol is better than a rifle. Sights for night firing can be improved both on the rifle and the pistol.

The equipment of the guard room with pistols, to be handed out to individual posts and patrols, and the use of mobile assault troops, must also be considered. Camouflage material to prevent the detection of posts in the dark—at least for static sentry posts—should be available. Shining buttons, bright bits of equipment, and white parts of the body betray a soldier quickly.

Training

Training requires considerable changes. These can only be outlined in the following details. It will be necessary to introduce in all Air Force training manuals a special chapter "Defense against Raids." . . . Up till now, training pamphlets have not included the point that *guard duty* is always part of "field service." It is important to formulate this principle. It must be made quite clear that every soldier on guard is not merely a sentry, but is also a *fighter*. It is also worth consideration as to whether the traditional division of training into *individual training, training in close formation, and training in the field,* is still up to date.

It seems nearer the mark to emphasize that there is a "training of the individual" within the scheme of "training in the field." This training of the individual in field fighting is indeed one of the main elements of training as a whole.

In this part of his training, the young soldier must learn and be trained to be an individual fighter. He must learn that kind of conduct in the face of the enemy which he will need if he is to give a good account of himself against superior numbers in the open. Greater importance must be laid on this in training in the future. The necessity that the man on sentry or watch patrol must fight, comes into clearest relief in combatting enemy commando raids.

In the conception of "individual fighter" the emphasis must be laid on the "fighter." Statements like the introduction to the section on battle training in "Principles for Training in War," which enunciates the principle, *"Battle training takes second place to drill,"* seem senseless.

One training manual says, "The sentry post must have a good field of vision, and be concealed from the eyes of the enemy." This is not enough. It is necessary that the soldier be trained to observe acutely for hours—standing motionless behind a tree, like a hunter on the trail.

An extract from another training manual again misses the mark for defense against commandos. There we read: "The sentry will observe the enemy. As soon as he sees anything suspicious, he will report it to his unit headquarters by sending a runner. He will continue to observe." If we acted in the spirit of this, even a double or a triple sentry post would never destroy an enemy night commando attack.

Instruction and training of the individual fighter lie essentially in the sphere of education of the mind and development of the will. The soldier must learn to have all his senses tense for long periods. He must combat the inclination to ease off his watchfulness and readiness if he is alone and without direct supervision and out of touch with his neighbor. He must combat the inclination to regard things carelessly as not suspicious or innocuous. On the other hand, these measures must not be allowed to produce uneasiness and anxiety on the part of the soldier. This must, therefore, be treated very thoroughly during instruction.

As an individual fighter, he must be made a daring one. In close combat, to jump at the enemy's throat is often the best defense. A good kick in the stomach can be more effective than a blow with the rifle. The soldier must be fully accustomed to close combat. The means to overcome the psychological restraint imposed by loneliness can be best learned by the young soldier in regular night training. Both ear and eye must be trained by night. Both sight and hearing by night can be improved materially by practice.

During individual training the instructor (section or gun commander) must know the capacity of every man in this respect. The same holds for the use of weapons. Aiming and shooting in the dark and half-light must be introduced into firing practice. The Air Force Small Arms training manual is to be enlarged on this subject. It holds especially for aiming and firing with a pistol. The proposal to improve sights for night firing has been mentioned above.

As a matter of principle, night training must begin in the recruits' first weeks. Here too, only practice makes perfect. *The holding of training parades at night must be laid down in orders and become the rule.* Silent movement, in particular, must be practiced. Long periods without moving—silent, slow, creeping movements—carrying of arms while doing so—silent whispering—use of the flashlamp—of tracer and signal ammunition, are only a few examples of what forms individual training in the field. The silent changing-over of sentries at night can be practiced easily by detailing an opponent to watch them.

Other parts of the training, such as finding one's way across country by night, use of passwords, knowledge of all signals and alarm equipment, coöperation within a file or patrol at night, require more emphasis than they have had up till now. There is no doubt that by methodical practice in this method of fighting by night (in which enemy commandos have been specially trained for a long time) speedy successes can be won. Even pre-military training must pay much more attention to carrying out night exercises.

In the face of the demands for this type of battle training—at least in war—other training subjects must take second place. "Present Arms" can also be done away with, where it still happens to be practiced. The

These Nazi training instructions, issued by the German Air Ministry, August 2, 1942, indicate a healthy respect for Commando tactics.

section, "Training in Close Formation," can be reduced radically. Experience shows that too much time is spent on it. It is considered profitable to abolish completely all formal movements on the drill square. That belongs to pre-military training for those between 10 and 17 years of age.

The above proposals for training and defense against raids will be introduced especially in courses for N.C.O's, and in recruits' training.

Other Means of Defense

Watchdogs with trained keepers are useful on all exposed airfields: likewise, *bloodhounds* for pursuing retreating enemy. The appropriate employment of such patrols under experienced leaders must be made familiar to the troops.

Methodical floodlighting of vulnerable points and of the ground leading up to them, can be useful. Small searchlights used for AA purposes can be so employed. Verey lights can also be fired. The illumination of the country, however, must be organized to occur at irregular intervals and over a considerable area.

Temporary use of trip-wires or ropes, which are removed by daytime, between individual posts and on tracks, can also be made.

The employment of obstacles with electric charges should also be carefully thought out. It must be possible to organize squads to make obstacles with the required material and means of producing currents, as permanent troops.

Acoustic alarms attached to obstacles are as good as unknown in the normal run of guards and protective patrols. The Chief Engineer of the Crete Garrison is at the moment experimenting with technical appliances of this sort.

The basic point of view for all measures to be taken is this:

To what extent, and with what means, can posts and patrols be improved and linked up by mechanical means of defense?

Even the essence of the above points is unfamiliar to many soldiers. When replacement personnel commence their active service, it is impossible to make up deficiencies in this kind of training because of the other heavy demands on their time, particularly in the case of specialists. The result is uncertain or innocent behavior, which often comes to light only in the first serious test (nervous loosing-off of rounds, pointless shouting in the darkness, "Is anyone there?" inability to grapple with a cunning, confident enemy, disorganized running about when incidents occur).

If better training from the bottom up is introduced, guards will go on duty with greater confidence, will bear themselves with more assurance and decisiveness, and so do more justice to their tasks in battle and on the watch.

"Special training of the enemy (Allies) contrasts with the state of training on our (German) side, which is in some ways no longer adequate, and is no longer competent to deal with enemy commando raids."

Black Star

Military Government

*by Major General Allen W. Gullion**

"MILITARY GOVERNMENT" is that form of government which a belligerent establishes and maintains by force of arms over occupied territory of the enemy and over all the inhabitants of that territory. The military occupation of enemy territory suspends the operation of all enemy government therein, both civil and military. It then becomes necessary for the occupying army to exercise the functions of civil government, both for the protection of its military interests and for the maintenance of public order. This it does by military government.

Military government has two objectives: First, to help bring the war to a successful termination; second, and entirely subordinate to the first consideration, to further the welfare of the people of the occupied territory.

At all times, winning the war or, having apparently won it, keeping it won is the prime objective. The question must be asked with reference to every intended act of the military government, whether it will further or hinder that objective. The administration of military government is subordinate to military necessities involving operations, security, supply, transportation, and housing of troops. If hostilities are suspended by an armistice or otherwise, all military government plans and dispositions must be made so that the troops may resume hostilities under conditions most conducive to a successful termination of the war.

Subject to the primary objective—winning the war and keeping it won—the welfare of the governed must be kept always in mind. Military government should be just, humane, and as mild as practicable. A military occupation marked by harshness, injustice, or oppression leaves lasting resentment against the occupying power in the hearts of the people in occupied territory and sows the seeds of future war; whereas just, considerate, and mild treatment will convert enemies into friends.

The exercise of military government is a command responsibility, and full legislative, executive, and judicial authority is vested in the commanding general of the theater of operations. The commanding general of the theater is, *ipso facto*, the military governor of the occupied territory. His authority is supreme, limited only by the laws and customs of war, and by such instructions as he may receive from higher authority.

It is elementary that command and civil governmental powers be combined in one person—the commanding general of the theater, who is aided in the discharge of his functions as military governor by the section of his staff known as the "Civil Affairs Section."

The question is not merely one of military versus civil government. What matters most is that the commanding general in any field of operations be given as complete control as possible over all the elements that must enter into his calculations. The administration of civil affairs is a vital element. Civil disorder or disobedience, hunger riots, passive resistance, inter-racial strife among the civilian population, profiteering, sabotage or false rumors may at any moment disrupt military movements of men and supplies or disturb the military timetable. This is the reason why all modern armies, including our own, have come to appreciate the importance of their civil affairs staffs and to regard them as an integral and essential branch of the service. A well-trained civil affairs staff and trained occupational police relieve the combat staff and the combat troops from civil affairs duties and permit them to confine their attention entirely to combat duties.

Military government is divided into two phases. There is the phase in which the Army is temporarily in control. This would be followed usually by a period in which an American or allied civil government replaces government by the Army, after which the occupied area is ordinarily returned to the defeated nation under the terms of a treaty of peace.

When the enemy has been driven back and his territory overrun by the victorious army, the scene is usually one of chaos. Frequently the area has changed hands several times. Towns have been coventried, homes have been destroyed, industry and commerce have been paralyzed, utilities have been ruined, food supplies are non-existent, famine and pestilence are imminent. The local government has either fled or become powerless. Should such conditions prevail, even in our own country, either in time of peace because of earthquake or other natural disaster, or in time of war following the ejectment of an enemy, martial law, which is military government at home, would have to be set up.

Under these circumstances, the Army must assume control and restore stability and order. This must be done, partly because the civilian population of the occupied territory would otherwise lapse into anarchy. If, however, economic dislocation and civilian distress were the sole considerations, a civil government might possibly serve. But, above everything else, the Army's lines of communication must be kept open and the military situation preserved. Yet the forces of the defeated army may be in the next province, or even just over the next mountain range, preparing to resume the struggle. The civilian population may be contemplating all sorts of

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*Provost Marshal General, United States Army.

sabotage or attempting to give aid to their own defeated forces.

Military necessity, therefore, demands that the conquering army be in complete control. The control that it thus assumes is what we know as "military government." It is one of those inescapable incidents of warfare, completely sanctioned by international law, that no victorious army can avoid even if it would.

Summarizing, the purposes of military government are first, to safeguard the Army and to maintain a favorable military situation; and second, to preserve law and order among the civilian population. It must lay the groundwork for the eventual restoration of the area and, in the meanwhile, render assistance to its people in such matters as food, medical supplies, and sanitation.

How long should it continue? Unless we invite disaster, it must continue so long as military necessity exists. No rule of thumb can fix its termination.

When military necessity no longer exists, the Army must lay aside the reins of government and hand them over to an American or allied civil government which, in turn, will govern until a treaty of peace is made. For example, in the occupation of our part of the Rhineland after the last war, American military government lasted from December, 1918, until January, 1920, when the Army turned the government over to the Inter-Allied High Commission, a civilian agency, which continued in authority until the area was returned to German control.

When the Army gives up its temporary control, the duties then to be assumed by the succeeding civilian agency will be on a much greater scale and probably of much longer duration. For it is then that civil authority must take on the burden of helping the crushed peoples re-create their world or, we hope, a better one.

The preparation for occupation, however, whether it be the temporary control by the Army or the more permanent régime of the succeeding civilian agency, must be substantially the same.

It is the duty of the occupying authority, whether military or civilian, to preserve, so far as possible, the local institutions, laws, and customs of the occupied region. Military government and the succeeding civilian authority are, therefore, in a sense, superimposed upon the existing local structure and seek to shape the latter to the military and political exigencies of the occupation. Hence, if the job is to be well done, those charged with its execution must have a knowledge of the institutions, customs, economy, and psychology of the occupied area and also must be prepared to supervise or to function throughout the field of public administration. This is a most complicated undertaking, that calls for a large number of professional skills.

Engineers of all types must assist in reëstablishing public works and utilities. Sanitationists must restore and protect the public health. Emergency relief workers must assist in feeding, clothing, and housing the destitute. The tangled fiscal affairs and the disrupted economy of the occupied country must be readjusted. The experts, to perform these missions, must also be indoctrinated in the backgrounds of the special areas in which they may operate.

The time is almost here when our armed forces will occupy important and extensive territories in widely scattered regions. When that time comes, we should be fully prepared to carry on those initial tasks of government that will fall to our victorious armies. At the same time we should shape our program so as to make the transition from the temporary control of military government to the more permanent civilian control as easy as possible.

Last May the Army established at the University of Virginia a School of Military Government where the top administrative personnel for military governments is being trained—not to be governors but to be administrative assistants to governors.

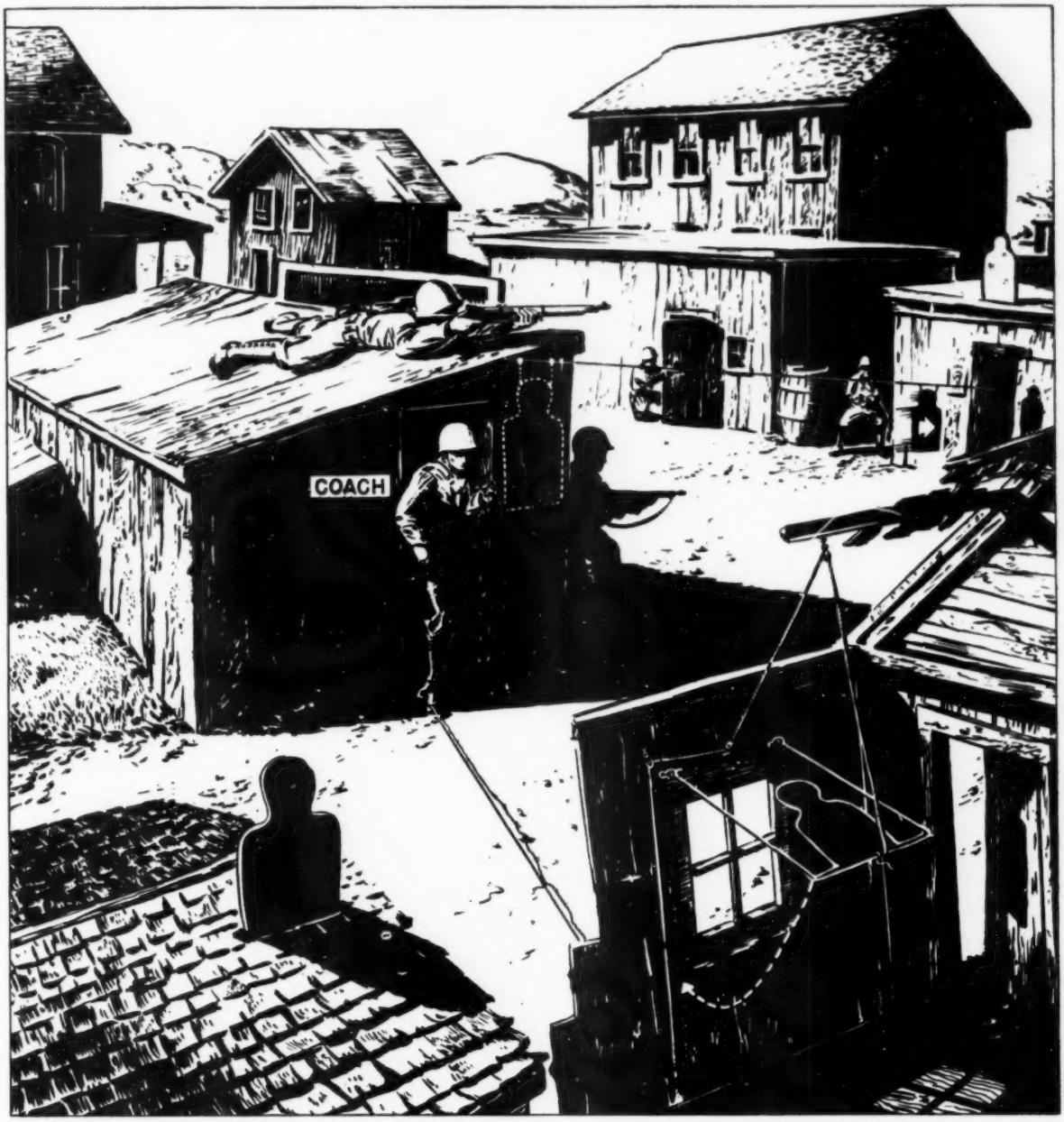
The school has a present authorized student body of 150 officers. Problems include not only studies of the laws, customs, economy and psychology of definite areas now in hostile hands but involve especially the preparation of definite plans for the taking over of those areas. For example, if we should occupy Hamburg, the commanding general of the theater (who will, of course, be the military governor), will have available a plan for its government, and will have officer graduates of the school who have prepared the plan. Moreover, not only will the top administrators have been especially trained and made available for the commanding general in his government of Hamburg, but the subordinate and technical personnel will also be on hand.

We are planning for the training of only 6,000 officers and men. In Poland alone, Germany has 7,000 engaged in occupational work as distinguished from combat duty.

At Fort Custer, Michigan, two schools have been opened for the training of junior commissioned officers and occupational military police. These junior commissioned officers will fill subordinate positions in the military government set-up, where their knowledge of languages will be helpful. At the same time, a large pool of expert technical and professional personnel has been created to supplement the efforts of those other groups.

The task of the Army in any military government is primarily an administrative one. Most of its larger policies, those that will carry over into the civilian government, will be determined by agencies other than the War Department or the Army. For these purposes, it will require, in addition to any administrative personnel, a large technical and professional personnel. These are now being selected from nominations made by civilian agencies of the government which will have an immediate or ultimate policy interest in any occupied territory.

In this manner the Army hopes to be fully prepared for military government in any occupied region.



Individual Assault Training*

ASSAULT training outlined herein is designed (1) to develop within the Armored Force officer and enlisted personnel a high degree of self-confidence, courage, and aggressiveness in battle, (2) to train in the tactics of close combat, so that, even after his own principal weapon, vehicle, and supplies have been lost or destroyed in battle, the individual may still be capable of continuing as a potent threat to the enemy, (3) to coordinate and exploit mental and physical conditioning concurrently, and (4) to acquaint unit commanders with a reliable means whereby they may gain insight of the individual training, qualifications and capabilities of their officers and men under simulated battle conditions.

In general, assault training should be conducted in the form of an extended field exercise, or maneuver.

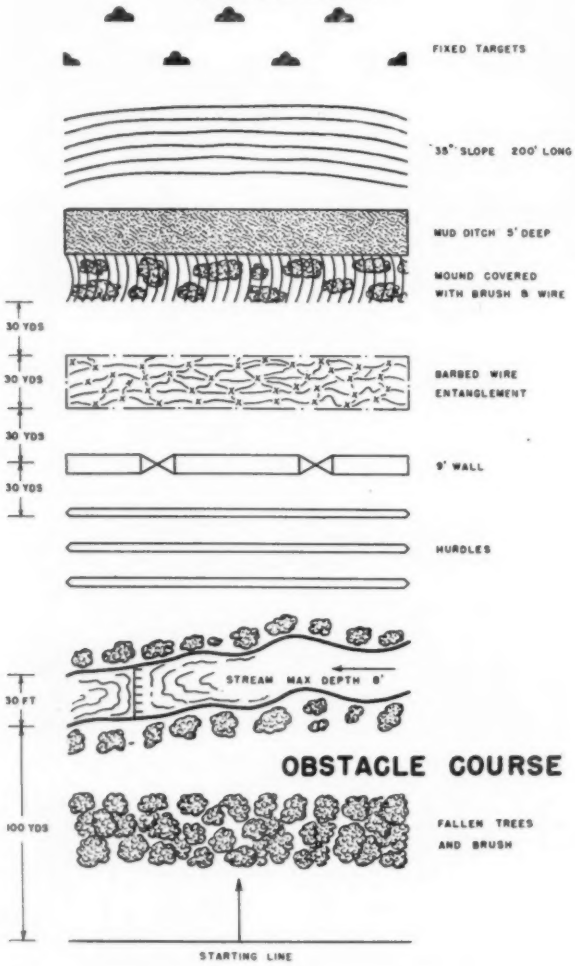
*Headquarters Armored Force, Fort Knox, Kentucky.

Close Combat

This training instills confidence, ruthlessness, aggressiveness in the soldiers, teaches them coördination of hands and body, and trains them in the methods of employing the bare hands, knife, or stick to destroy the enemy at close quarters. Also stressed are general theories and principles of balance and the application of strength against weakness, use of kicks and blows and their counters, wrist and hip throws, stick fighting, pistol disarmament, and "come alongs."

For instruction, the soldiers are paired according to size, and each pair practices the holds and methods as explained and demonstrated by the instructor from his platform.

Obstacle Course



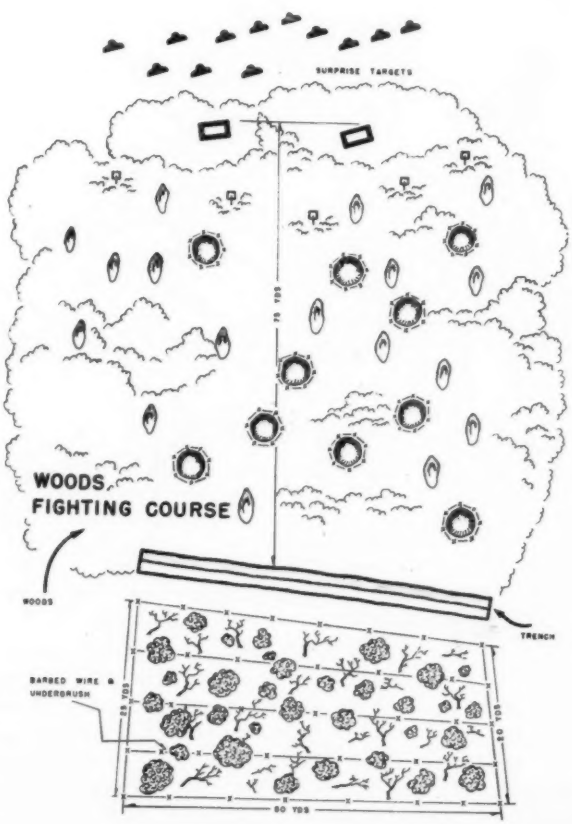
This phase is designed to develop endurance, physical fitness, coördination and agility, to introduce fatigue and mental strain prior to participating in assault training, and to teach the soldier to handle his small arms under adverse conditions.

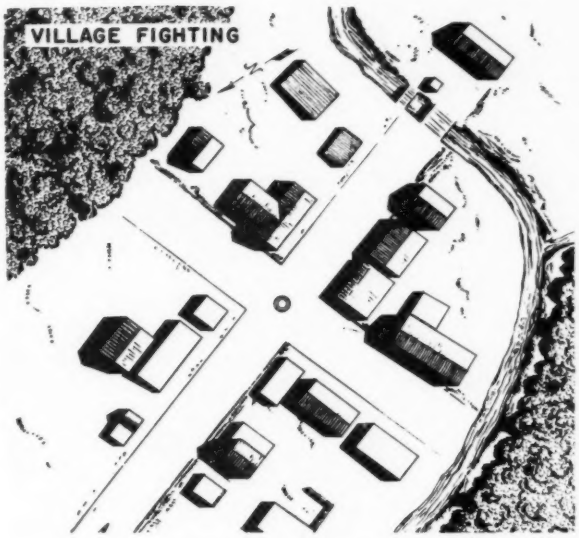
In the course, the soldier runs through soft terrain, indiscriminately strewn with fallen trees; swims a small stream; negotiates a platform 8 feet high and a series of hurdles of log construction 3 feet to 5 feet in height; scales a 7 foot smooth wall; crawls through 30 yards of barbed wire entanglement exposed to smoke and explosions; crosses, in succession, a wire mesh covered earthmount 7 feet high and an antitank ditch 5 feet wide, and climbs a hill at a 35 degree slope 200 feet long.

Woods Fighting

In this phase men are taught to advance rapidly and silently through woods, use natural cover and concealment and to handle small arms properly, using aimed or battle fire shots as required by the exposure of targets at various distances and time intervals.

Three groups of three men each under a leader are formed. These groups work forward through woods in a triangular formation, the three groups forming a triangle with the apex to the rear. Each group of three men uses the same formation as they move toward an objective. The leader, who is in the center of the large triangle, directs his men in the capture or destruction of snipers' posts and pill boxes as encountered, and gives the signal for the final assault on the objective. Ambush of mounted and dismounted patrols is one variation of woods fighting taught. Advantages and disadvantages of woods fighting should be stressed during this training.

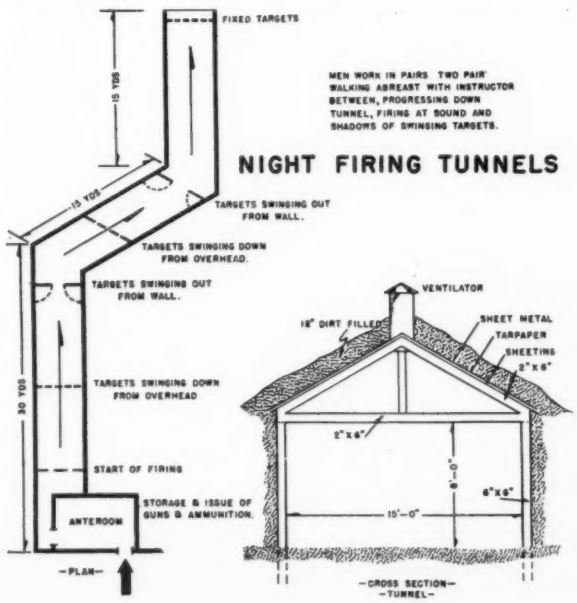




VILLAGE-STREET FIGHTING

This instruction trains the soldiers in street reconnaissance, introduces them to booby traps, and teaches them to handle loaded weapons in the presence of other men. Soldiers, closely supervised by instructors, are required to move through the village for reconnaissance purposes.

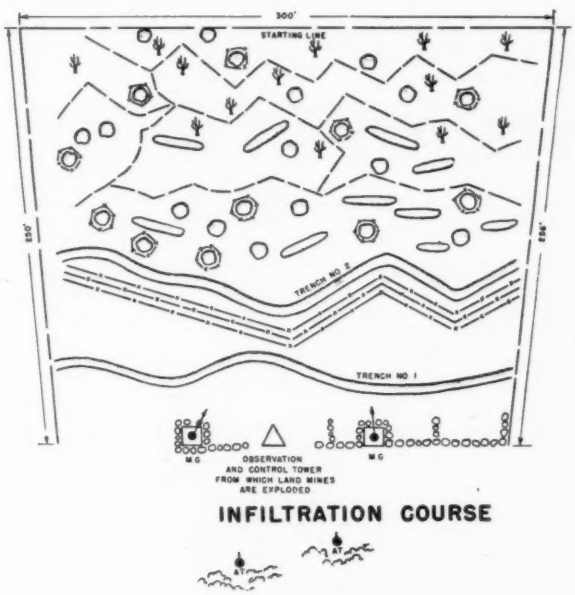
At the discretion of the instructor, targets are exposed at varying firing distances. Booby traps are exploded by the careless soldier who fails to perform proper observations during his advance. Grenades are employed in reducing strong points, clearing buildings, and for general noise-making purposes, as desired by the instructors. Movement in the village is rapid when the troops are exposed. Men progress by a series of bounds from cover to cover where they are halted momentarily for the purpose of observation, reorganization, and control.



INFILTRATION COURSE

Here the men are acquainted with gun and shell fire and explosions as they will experience them on the battlefield, and are taught the correct methods of negotiating battlefield obstacles under gun and shell fire. Machine guns are fired to adjust grazing fire 30 inches high before men are placed in position.

To begin this phase, the men starting at the far end of the course, drop to the ground upon signal and advance toward machine guns. As they advance they encounter trenches with parapets on the side toward the machine guns, slit trenches, barbed wire 18 inches high, shell holes and fallen trees. As men crawl near mine positions, mines, consisting of one pound TNT, or dynamite, are exploded electrically by an operator in the control tower. Machine guns maintain intermittent fire until the men reach the last trench. As soon as all the men are in the last trench, they charge over the last parapet and assault simulated antitank guns located in the rear of the machine guns.



SCOUTING AND PATROLLING—AMBUSH

This training is designed to familiarize troops in the practical use of the map and compass and to teach them the art of ambushing armored vehicles, mounted and dismounted patrols, attacking bivouacs, command posts, and assembly areas.

Instruction should include the following: plotting locations, measuring distances, marginal information, use of declination information, contours, orientation, use of compass, dead reckoning, day and night, simple sketches, route sketching, estimation of distances, observation, ambush of mounted and dismounted patrols, ambush of vehicles, use of mines and mine fields, attack of command posts, bivouacs, and assembly areas.

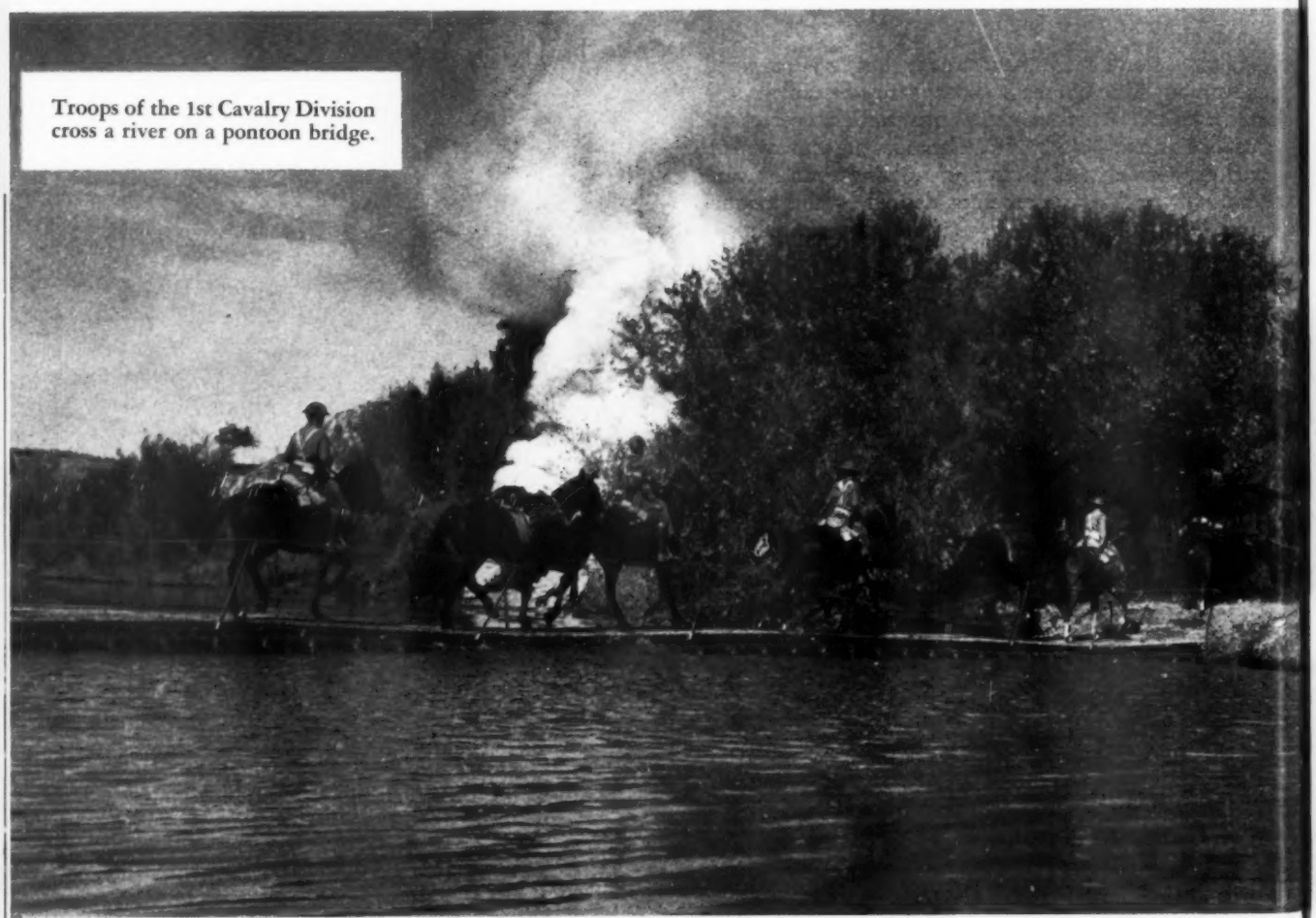
Eyes, Ears and Nose

IF you want to cut yourself a slice of board, you use a saw; but you don't use a saw to bore a hole or to weld a joint. Or, anyhow, if you do you'll never rate 110 or better in an Army classification test. An army is a weapon, of course, yet, paradoxically enough, it is a weapon made up of a multiplicity of tools, each of them designed to do a specific job in the hands of men who understand its characteristics and its limitations. For example, a heavy tank is a tool designed, among other things, for attack on the ground as part of a striking force. That is a characteristic. You would not attempt to fly a heavy tank to Tokyo in the hope of dropping a few bombs on Hirohito. That is a limitation. Yet, I have it on good authority—history—that people who have not understood the uses of cavalry—and this includes general officers who have led otherwise blameless, if not highly intellectual lives—have employed it with an equal degree of absurdity. . . .

An American cavalryman must know everything an infantryman knows and must be proficient in the use of infantry weapons, including rifles, automatic rifles, machine guns, light and heavy, carbines, pistols, tommy guns, grenades and even bayonets. He must be something of an artillerist, for he is armed with antitank and assault cannon and with mortars. He must be a bit of a motor mechanic, a good tank and armored-car driver, a motorcyclist, to mention but a few of his mechanical functions. He must understand signal and radio communications. Beyond all this, he must know how to care for and feed a horse, to love and to cherish it in sickness and in health, till death does them part. Also, he must be able to ride the creature. . . .

The cavalry is an eye, an ear, even a nose, at times, for the Army commander. The cavalry seeks out, ferrets out, smells out information the way a good bird dog finds game. By day or by night, in jungle or on moun-

★Reprinted by courtesy of *The Saturday Evening Post*, from issue of February 13, 1943.



Troops of the 1st Cavalry Division cross a river on a pontoon bridge.

of the Army ★ - - - by Stuart Rose

tain trail, along the roads, afoot or ahorse, in jeep or combat car, in a light tank or on a motorcycle, the cavalry covers the ground—feeling out the enemy, establishing contact, penetrating, infiltrating, securing identifications, taking prisoners, encircling the flanks of Tojo or of Fritz.

And always paramount in the cavalryman's mind, be he colonel or corporal, is information—get the information and send it back in time for the boss to act.

The cavalry works closely with air. The planes go out on strategical reconnaissance, pointing out and informing cavalry of the general locations of hostile forces, observing and photographing large concentrations of troops in rear areas, ration and ammunition dumps, main routes of communication and supply. But a plane can photograph a wood and return with a picture of a wood. Whether, concealed among the trees, there are twenty thousand or one thousand or no thousand men, neither the observer nor his camera can tell.

Daily, for weeks, the Jap planes flew over the jungles of Bataan. They had complete air supremacy and with Nipponese thoroughness they snapped, snapped, snapped their shutters, and secured for the archives of Tokyo what is undoubtedly the most elaborate record of what a jungle looks like from the air ever compiled by man. What happened when their troops attempted to advance on this innocent-appearing tree growth is too well known to warrant repetition here.

The able Army commander, then, knows how to use the tools in his hands. Having secured his long-range information from the air force, he passes it along to his cavalry and sends it off on a tactical reconnaissance mission. Tactical reconnaissance is merely a military euphemism for a close-up. What the general wants is detailed information as exact as it is humanly possible to obtain. Where is the enemy? How many troops has he? How are they armed? Are they fresh or weary, aggressive or supine? Are their flanks secure or in the air? Are there any soft spots in their line, suitable for infiltration? What are the routes? Can all combat troops and their loads use them? Where must they be strengthened or repaired? All this the cavalry will find out and report.

If the general is fortunate he will find himself supplied with both kinds of cavalry, horse and mechanized, and, understanding his tools, will employ them intelligently. In rough, heavily wooded or mountainous country he will use his horse troops; for with all our mechanical ingenuity we have not yet contrived to produce a machine that can go where a horse and a man can go. Faster than infantry, fresher—for mount and pack horse carry the weapons—the cavalry slips silent through the trees, scouts out, flankers to right and left. When the point draws fire or otherwise establishes contact, it quickly dismounts, sends its led horses to cover in the rear, and disposes its riflemen and machine gunners to establish a base of fire. Then, maneuvering on one flank or another, the main body brings its weapons into play and presses the attack home with M1—Garand—rifles, light and heavy machine guns and, possibly, light artillery and mortars. Here no lance pennon flutters bravely, no saber glints in the sun. The good cavalryman knows the use of ground and cover, skulks like the redskin and strikes with all the fury of his heavily concentrated fire power. If prisoners are to be taken, he'll stalk them and go in with bayonet, pistol or grenade.

In open country, well supplied with roads, the general will use his mechanized cavalry. Armored combat cars mounting assault guns, machine guns and mortar-laden jeeps, will fan out on the road net, exploring to right and left, pushing ever forward to seek out an antagonist. Swifter than horsemen on this type of terrain, the mechanized patrols cover a lot of ground, pack a heavy wallop. Their speed permits relatively great distance between vehicles and they are not a profitable target from the air. Somewhere, hard behind, hurry the swift, light cavalry tanks to push home any attack that may be developed. Each mechanized cavalry troop carries its own pioneer and demolition section with it. On an advance, the pioneers can repair or strengthen bridges, construct rafts with which to cross unfordable streams, exercise their engineering ingenuity in countless helpful ways. If a withdrawal becomes necessary, the demolition experts will see to it that no bridge remains in the path of an enemy advance.

Road bound to a certain degree, mechanized cavalry, like the other military tools, should be used within its limitations in order to be most effective. Each army corps is supplied with a mechanized regiment, each motorized infantry division and each armored division with a mechanized squadron and each foot or mountain division with a mechanized or horse troop.

Horse or mechanized, the tactical tasks of cavalry are basically the same. They are, in brief, to reconnoiter in front of the army corps in order to determine the location, strength, composition and disposition of the enemy; to report on suitable routes of advance and important terrain features; to operate on exposed flanks of our own troops and to protect them; to use its mobility to encircle or infiltrate the enemy force; to attack his flanks or rear and disrupt his routes of supply and communications; to push rapidly forward to seize and hold important terrain features, pending the arrival of our own slower-moving main body; to prevent enemy reconnaissance units from advancing; to fight delaying

A machine-gun troop gallops forward to a firing position.

actions to cover a retreat, and to move rapidly to meet a paratroop or airborne-troop threat.

The late General Sir John French stated that in 1914 a brigade of cavalry saved the British Army. The delaying action fought day after bitter day by this single brigade of exhausted but indomitable horsemen enabled the Old Contemptibles to withdraw from Mons more or less intact.

Early last winter the highly trained and numerically powerful Russian cavalry so harassed the Germans on Russia's snowbound plains that the *Reichswehr* has since combed conquered Europe for suitable cavalry mounts. In spite of the fact that it has always been cavalry-minded, the German Army permitted itself to be caught with only 50,000 mounted men in the face of some 900,000 Russians, and its mechanized units had been rendered impotent by the weather.

In December of 1941, the 26th United States Cavalry (Philippine Scouts) fought the brilliant delaying action which enabled General MacArthur to bring together on Bataan his two widely separated forces. Had the 26th not been present to retard the Japanese advance, it is probable that our armies would have been beaten in detail within a few days.

So much for what modern cavalry can do. What manner of man is it, then, who can accomplish these prodigies of endurance and valor? Perhaps the simplest way in which to make him understandable to the layman is to describe him as a horse-riding member of a commando unit. Never a long-range fighter, even with his heavy fire power, he is constantly in contact with the enemy, running the ends, slipping off tackle and playing hell with the backfield. In order to accomplish this, he must be tough, he must be intelligent, he must have great initiative, and he must be proud. . . .

Clearly it takes time to train cavalrymen, and time is what we have none too much of. Your infantry recruit, if he's of good material, can put up a pretty good show in three months, and in six should make a soldier capable of going into action. This is not true of the mounted arm, whether the mount be a horse or a motor-powered assault gun; there are just too many things to be learned. In from nine months to a year, the average healthy American boy can be shaped into a cavalryman capable of understanding the complex duties of his arm and of carrying out the highly individualized missions upon which in all probability he will be sent. Anything short of that and the high command would be guilty of sending a boy on a man's errand.

Ranking cavalry officers are well aware of this and are putting all their thought on intensified training. Our cavalry is none too numerous at the moment, but when we need them—and we're going to need them bad—it will not be the cavalry's fault if a sufficient force of trained men is not available.

Of course, our General Staff is up against the great problem of building an army virtually from scratch with which to meet the hundreds of veteran divisions of our antagonists. We must have infantry and artillery, we must have an armored force, and we must have the most powerful air force in the world. Granting all that, it is still true that an army not properly balanced is in no condition to perform its function in modern war with maximum efficiency, and without the maximum this is going to be a tough one to win. Informed sources report that the Staff is well aware of this and other technical deficiencies in our fighting forces and that it is taking rapid measures to rectify them.

The British General Sir Harold Alexander complained bitterly that he might have held Burma indefinitely had he been equipped with anything save mechanized troops. Pinned to the one decent available road, *he was helpless in the face of a Japanese Army that swarmed over him from all sides, on foot, on horses and in horse-drawn carts.* In this connection, it is interesting to note that the Japs, formidable fighters that they are, have plenty of tanks but not a single armored division. An American officer who served on our intelligence staff in the Philippines two or three years ago told me that, in the course of his work, he was supplied with the Japanese tables of organization. These tables very intelligently divided troops not into the conventional corps and field armies but into task forces, each one carefully designed to do a specific job, with full knowledge of the country in which it was to operate. It was a cinch, he said, to single out the Philippine invasion army, for its guns and supplies were horse and cart drawn and it was provided with two brigades of horse cavalry. The Japs had not colonized the Philippines for nothing.

CAVALRY PATROLS*

by Captain Enrique Sandoval Castarrico, Mexican Army

IN the cavalry branch of the Mexican army, a patrol is a small detachment of troops which, placed under the orders of an officer or noncommissioned officer, is sent out from HQS of the forces to accomplish a definite mission.

Generally the patrol is made up of soldiers picked as much for their horsemanship as for their discernment and ability to carry out this kind of operation. From the chief of the patrol down to the horses, all are picked. The number in the patrol is varied according to the mission, as is the number of reports it must send unless it has means of transmission which eliminate the use of messengers. It may consist of only three individuals but, if necessary, its effective may go as high as a platoon.

When it is headed by an NCO, the patrol generally is small, but even if it is of small size, a commissioned officer may be its commander. When this happens, the mission of the patrol is more important and, according to Mexican regulations, is called "official reconnaissance." All must be brave men—active, wide-awake, observing, and able to make quick decisions, as well as competent to fulfill their mission.

The main reason that the effective of a patrol is small is that a small group is quicker, more disciplined, and more maneuverable than a large one, which is also more easily discovered. In addition, the task which is entrusted to it does not require a greater effective nor are its elements destined to fight.

The missions which may be entrusted to one of these small groups are, in general, scouting and reconnaissance.

Let us make some general remarks, first, on why it is commonly said that cavalry patrols *explore* or *scout* because they go out looking for the enemy; then on why, even if this is the case, they really do nothing but *reconnoiter*. In addition, in their job of reconnaissance, on discovering the enemy and telling that he is advancing, they carry out a function of the intelligence branch for the forces of which they are a part, and for which reason they are designated "reconnaissance" or "intelligence" patrols, as the case may be.

At times, the particular situation in which cavalry patrols find themselves is fixed in its nature. For instance, a patrol which is operating for the security of a flank of a column is commonly called a "flank patrol," and one which works in a reconnaissance echelon of a vanguard may be called an "apex patrol."

*Extract from *El Soldado* (Mexico), April, 1942.

Mexico steps up the Hemisphere defense. Here a troop of Cavalry undergoes inspection.

There are operations so closely related to scouting that they become confused with it and which, because of their nature, use patrols not only to reconnoiter but also to hinder the enemy from discovering our forces. These patrols have been called "counterreconnaissance" patrols and differ from other patrols in that they form part of a screen, can be backed up by forces posted for this purpose behind the screen, and are of a greater number since their mission is to repel the enemy patrols.

There are various other missions which fall to patrols, such as those of reconnoitering a road to verify its existence and determining the direction it follows, the state it is in, the possibility of its use, the condition of its defenses, and the facilities which in general are found for its utilization in the operations.

On other occasions patrols are sent out with the object of getting information about the character or nature of the terrain, simply to know what it is like. However that may be, the activities of patrols in general are of a reconnoitering nature.

Whatever the number of missions that may be assigned them, we are interested here only in the functions of an isolated patrol, which are the following:

To discover the enemy and give information regarding his activities, arms, nature, and strength.

To inform whether, in a determined point or zone, the enemy is present.

The designated commander—in the light of the orders that he receives, which in general contain information about the enemy and enemy forces, useful knowledge as to what these latter will do, what information is desired, the points to where he must send this information, the limits or zone where the patrol must work, and the probable duration of its service—takes the following measures:

Selects men and horses—the men, those indispensable, especially when the return is within a short time; and the horses, those in good physical condition and well shod.

Determines the route to follow—a study of the situation when the route has not been marked.

Fixes the hour for departure and keeps in mind the distance to be covered—the nature of the terrain, and the urgency of the information.

Takes steps to obtain the necessary objects, such as shears, field glasses, maps, etc., for the best fulfillment of the mission.

Tests, by means of an inspection before leaving, to see that everything is there and ready.

Makes known to his immediate subordinates the orders received so that if the leader is missing, the next in line may carry them out and at the same time makes known the meeting place in case the patrol is obliged to scatter completely.

Informs Intelligence of friendly forces of the probable route for return so that they will not be fired on by mistake.

Whatever may be the mission of the patrol, its commander must bear in mind that if it does not acquire the

Mexican Cavalry played an active part in recent army maneuvers.

information which interests the command that sent it out, the mission has not been fulfilled.

The patrol must report whether the enemy is present or not. First, it must indicate clearly *where, how,* and *when,* and it must mark the armed branch and constitution of the enemy. The armed branches are well known —infantry, cavalry, artillery; the type—motorized or armored; ordinary infantry or motorized infantry; horse-drawn, towed, or self-propelled artillery.

To be able to inform as to *where,* it is necessary to observe precisely the location of the enemy and to see if they are bivouacked, on the march, or simply halted; in formation or not. In any case, it is necessary also to estimate their numbers by direct observations. Thus one can tell *how.* To tell *when,* one will note the day and hour.

Information can also be gathered from news, signs and footprints.

The information furnished by the inhabitants ought not be taken seriously, at least not until the same information is obtained from various sources—a great number if the operations are in enemy territory. In any event, in the report, it must be stated that certain *versions* were gathered, so that this information can be accepted at its true worth.

Comments and footprints are not very reliable; many times they are deceptive, but they are useful. Above all, the footprints show whether the forces are in small or large numbers, to what armed branch they belong, and in what direction they are marching. They show also where they have stopped.

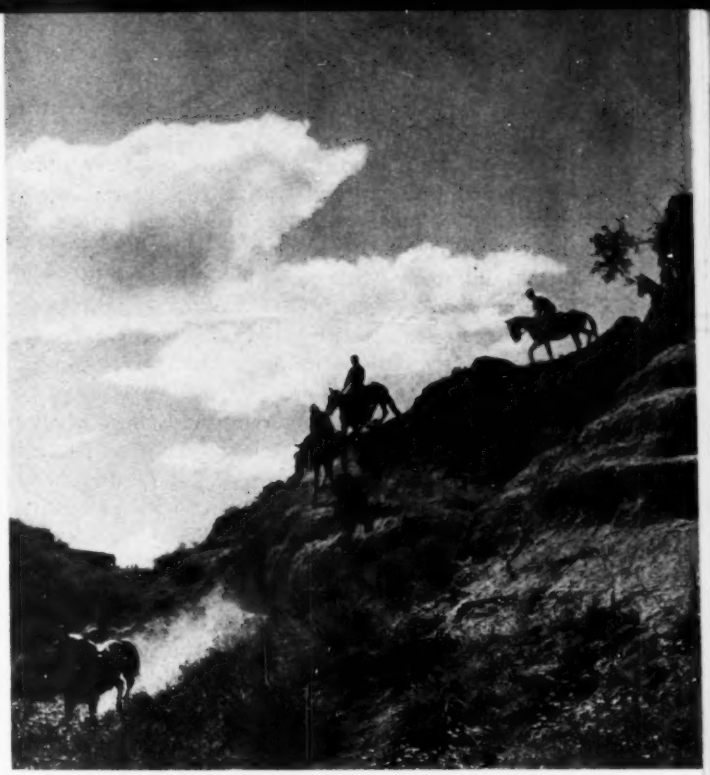
Among signs are classed also clouds of dust or smoke, and abandoned equipment. From them can be deduced the branch of service, the make-up, and sometimes the conditions in which the enemy is moving; but then one cannot be sure of this information, and it should be reported as "probably" of the infantry or cavalry—or a unit in possession of vehicles.

The documents which are received from civilians, from post offices, or from prisoners, contain very valuable information. The mails or press and military documentation found is very useful. Particularly this last gives data of great importance. When it falls into our hands, it must be utilized to orient our search, and sent immediately to the superior authority.

Information should be sought in this manner. It should never be a question of obtaining it by force; the patrol works by *cunning,* never by force. This last means is used, indeed, but only by detachments that operate in the open and attack in order to succeed in getting, by means of combat, the information which patrols could not get by means of cunning.

However that may be, every report ought to include what is observed or ascertained, without deductions or commentary.

Categorically speaking, there are no rules laid down for a patrol in movement. One can only say that it should secure for itself control, dissimulation, and liberty in its movements. All of these are gained by means of dispersed formations which reduce its visibility and vulnerability. With its chief at the head, and in these formations, the patrol will be able to advance rapidly, to elude obstacles, and to reach hiding places. At most, one or two individuals should be sent out to observe in directions of interest. Care must be taken that they do not go too far away—the reduced numbers of the patrol do not allow the creation of a small vanguard. Almost always the necessities of concealment and the characteristics of the terrain determine the action of the patrol and the very elementary means of security already mentioned. A great part of the security depends on concealment. At night, when territory controlled by the enemy must be traversed, the patrol must seek hidden places to pass the night; and if they fear being discovered, they must even change hiding places several times.



Cadets at the Mexican Cavalry School spend three hours each day at the training ground. Here they are taking the horses over and down an 80 foot cliff.

The conduct of the patrol during the carrying out of its mission may be summed up in these words:

To see without being seen.

Not to attempt to make contact with the enemy as its mission is not a combat one.

To fight only when attacked and there remains nothing else to do, and to do so *mounted.*

To advance cleverly, evade the vigilance of the enemy, and advance by jumps.

In case of attack the patrol or the individuals who are left, *must* deliver the report.

Once the enemy is located, to continue observation without losing sight and, when there are no orders to the contrary, to report each time that the enemy changes direction or shows distinct positions.

To see without being seen calls for much cunning and concealment. To this end, in moving from hiding

place to hiding place, the patrol must pass very rapidly by exposed sites, avoid having any shining arms or equipment or making clouds of dust and noises. At the same time, it should avoid passing by inhabited places and roads when it is not interested in reconnoitering there.

The successive occupation of hiding places and points appropriate for observation is the manner of carrying out operations.

First, it is necessary to observe from hiding, whether the enemy is present or not in the place of interest. If the enemy is not visible, the patrol must reconnoiter thoroughly and advance on the place with precaution.

If it is a house in question, and the scout is alone, he must reach the spot rapidly, before its occupants can drive him back. If there are two or more individuals, they should advance from different directions, and while some enter, the rest remain outside, ready to fight. Another group will remain in the distance, ready to fire.

Similar precautions are to be taken when it is a question of a town; but when traversing it, the patrol must be ready to fire on windows and doors.

The patrol proceeds in the same way in woods. If it is noted that their habitual calm is altered, it is a sign that the enemy is there. However this may be, to observe and listen is the first thing.

To scout in enemy camps calls for bravery. It is not enough to see them, it is necessary to know their make-up, and this requires coming in close to observe the stores, fires, mines, and other details which may reveal to us their arms and total effectives.

If the enemy is on the march, the observation must be minute, well-timed, and note taken of how they march. Special care must be taken not to be discovered by enemy scouts.

A height is of good use in this work.

On reaching a river or a bridge, the patrol must take the precautions previously mentioned. In addition, all noise must be avoided.

If the objective of a patrol is to reconnoiter a bridge, it must note the length, the width of the banks of the river, and the conditions of stability.

Patrols are not destined to fight, but if they are unexpectedly attacked they must defend themselves by fighting while mounted or else by scattering.

If enemy patrols have been discovered, and they are not aware of the patrol's presence, the patrol should make a note of the fact, continue observation and try to pass by in order to complete its observations and give the respective report.

If the opportunity to take a prisoner definitely presents itself, the patrol should never let it pass, unless the outcome of the mission is compromised thereby.

When there is no other recourse, as in the case of an unexpected encounter with an enemy patrol, the patrol should attack mounted, rush on the enemy without hesitation, and prevent the enemy scouts from firing. In this way the initiative is taken, and this is the only way to gain the advantage without losing the mobility so useful in such a situation.

If the work of the patrol is continuous, reports are always useful, even if they say only that "the enemy is not present." The failure to report is the cause of frequent abuses in the use of patrols; this is the reason why, from a practical point of view, it is not possible to determine when a mission has been accomplished.

Nevertheless, any commanding officer who knows his needs ought to know how to determine what information he needs for his operations. Hence it is possible to state even the time limit within which the information should be delivered, and, since this is the case, there is no difficulty in indicating to these small detachments when or how their mission should end.

In such cases, the mission is completed when the requested information is delivered. Then the patrol can return; if the opposite is true, it should continue its work.

At times, however, certain facts observed and considered of interest are an inducement to continue. At these times, it would be an error not to take notes, report, and continue.

Really, a great deal of judgment is necessary to determine the course to be followed in these cases, but only an indifferent person would consider returning. In spite of everything, however, there comes a time when even though there is still physical resistance present, it is no longer possible to continue. There are no more men to serve as couriers because each report sent has meant one man less; the couriers have not yet returned. The limit will have been reached. The leader will return alone after he has accomplished his mission.

Reconnaissance and Protection

". . . It cannot be too clearly impressed upon all authorities issuing orders that these two rôles are incompatible, owing to the fact that different tactics are required for their execution. *Reconnaissance means dispersion; whereas, Protection means concentration of force.* The authority issuing the orders must decide upon the relative importance of these two services at the moment and must then allot his available troops in the required proportion."—Major General Sir Edmund Ironside—*The Lessons of the East Prussian Campaign* (World War I).

Naga Hill natives carry supplies to U. S. soldiers in remote outposts near the upper Burma border in India. A U. S. soldier leads the way across this rapid, shallow stream.

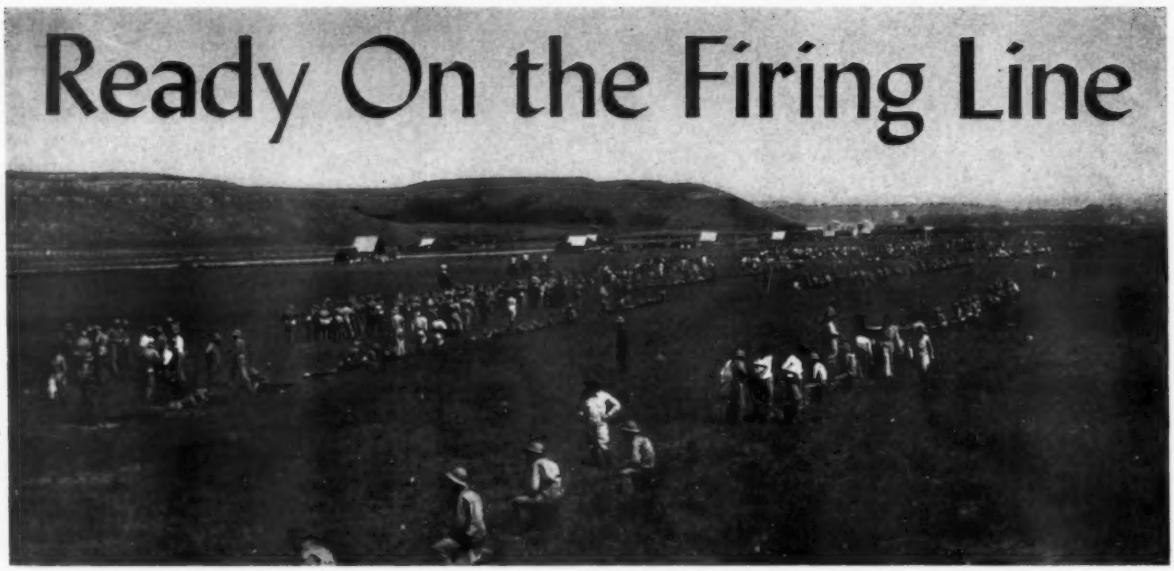
Photos by Press Association

Supplying U. S. Troops in India

Two proud-looking camels haul supplies in a rubber-tired wagon to an airfield.

Elephants are used to transport supplies to the interior. These two U. S. soldiers supervise the loading at a supply base.

Ready On the Firing Line



*by Lieutenant Colonel James W. Wallace**

TODAY, as always, the individual soldier with the basic weapons of his arm, continues to represent the margin of victory. No battle is won until the soldier, armed with his weapon, is able to advance, close with the enemy, defeat him and occupy the strategic positions —and no individual soldier is able to do that job until he knows how to use his weapons. Since our early ancestors threw their first crude spear, the emphasis has been on hitting the target. The bullet must strike its mark.

With this principle in mind the Weapons Department of the Cavalry Replacement Training Center was formed with the mission of training the basic soldier in the use of his weapons—training him so that when he pulls the trigger there is a reasonable chance of some Jap, Nazi, or Italian dropping.

All of the department's training is given out-of-doors. The ranges are not only ranges—they are classrooms. "Drive—Drive—Drive" has been the watchword in an effort to make every minute of the all-too-short days of training give the trainee another bit of information that someday might save his life.

The trainees have been a varied group during these two years. But when guns are loaded and locked and the flag dives down behind the butts and the targets come flying up 200 yards in front of their nose, they are all in there—holding and squeezing and muttering a soldier's prayer for those pin-wheel fives.

Training programs include instruction in the M-1 rifle, the caliber .45 pistol and the caliber .30 machine guns, light and heavy. While these three weapons consume a big percentage of the training hours, instruction is also given on the Thompson submachine gun, the caliber .50 machine gun, the 81mm mortar and the 37mm antitank gun.

*Chief of Weapons Department, CRTC.

The Firing Line

The "heart" of the Weapons Department instructional system is "The Line"—the eight or nine instructional groups (depending on the size of the increment) that get the full weapons course. The Line is divided into two sections, each in charge of a section chief. These sections are then divided into instructional groups.

The most important job of the instructor is to perfect his organization so that full use is made, not only of his own assistants and cadre, but also of all troop officers and noncommissioned officers. This calls for teamwork.

Two years of experience has proven that the number of men who really grasp the instruction and the number of men who qualify depends more on the soundness of organization than on any other factor. Trainees must have personal attention. A study of scoreboards during rifle firing is convincing evidence of the importance of individual instruction. On a great many boards it will be found that the "bolos" are bunched. One or two firing points are responsible for most of the men who fail to qualify. These men received the same general training. It seems logical that their failure lies in the lack of personal instruction. To give this personal attention to every member of a large instructional group, sound organization is required.

Recent experience during "range week" has shown the importance of having experienced officers supervise the pits. This has paid big dividends. Studies of firing lines have shown that the quiet firing lines usually are the ones with the high scores.

Keeping down noise does not mean keeping down enthusiasm, however. Instructors are expected to use all reasonable devices to encourage competition and resulting enthusiasm. For example, instructors have

found that competition within squads and within platoons to determine the "fastest loader" is about the most effective way of teaching in a very few minutes the loading of clips into the M-1 rifle.

In addition to the regular lessons on the basic weapons and firing on known-distance ranges, each increment is given instruction in firing on moving vehicles and moving aircraft targets. This firing is done with caliber .22 rifles. One period is given to firing the machine gun at moving targets, and one lesson to machine gun field firing. Trainees are also given "back-of-the-line" instruction on such topics as technique of fire, fire orders, range estimation, use of field glasses and elementary gun drill.

Special Activities

In addition to the main job of the department on the Line, there are three special activities.

The first of these is a Pool Officers Course—a special weapons refresher course for officers in the Cavalry Replacement Pool.

Recently added to the Weapons Department was an Armorer's School—to train troop specialists in weapons repair and maintenance.

Possibly the most interesting of the special activities is the weapons instruction of the Special Training Squadron. An important angle is the problem of men who have not mastered the English language. Usually the largest group is made up of trainees who speak Spanish. There have been also a number of Chinese, Italian and French speaking trainees. In a recent gas drill, given by the squadron, commands were given in seven languages. Nomenclature of weapons and parts must be learned in English. So to the recruit's normal difficulty of learning names, there is added the task of learning them in a foreign tongue. Most trainees have been able to do it.

In any instructional department of this kind a great deal of "behind the scene" work must be done.

A squad leader shows recruits how to strip and assemble the M-1 rifle.

A major share of the training responsibility must fall on the shoulders of the coaches.

The Range

The work of the range section includes keeping the ranges and targets in such condition that instructional groups can use the ranges when needed without a thought of the work that makes this casual use possible. Twelve men spend all their time on range maintenance, and ten men have the big job of preparing and distributing targets. This section must handle a rifle range with 225 firing points, five groups of pistol targets with 30 targets per group, a standard miniature antiaircraft range, 10 landscape target groups, a 1000-inch machine gun range with 128 firing points and a field range. In addition, the department has access to a 1000-inch moving target range with 36 moving targets.

A feature of the Pistol Range is a permanent post at every firing point on the 25-yard line. This post has a shelf for ammunition and a permanent "clearing-block" for the pistol. This safety feature is soon to be installed on the 15-yard line.

Matériel and Replacement

Among the duties of the Matériel Section is the "live storage," care, maintenance and repair of all department weapons. An officer and four men are kept busy maintaining weapons for accurate firing despite constant use.

Ammunition supply is no little problem. Some idea of its magnitude can be gained from the fact that 54,000 rounds may be fired in an afternoon on the machine gun ranges or 48,000 rounds fired in a few hours on the rifle ranges.

The Matériel Section has been able to gather valuable information concerning the ability of weapons to stand up under constant use. Any weak spots soon make themselves apparent under the thousands of rounds that are fired. Some of this information might prove valuable to troop commanders and other officers interested in weapons maintenance.

For example the department has 671 M-1 rifles. Since the modified firing pin has been in use during the past year only six pins have been replaced. Before the new firing pin was installed it was not unusual to replace as high as 100 firing pins in one week. Eighty guns were replaced during the first 20 months of the department's existence. These rifles had each been fired from 10,000 to 12,000 rounds.

Biggest parts replacement in the M-1 rifle now is the extractor or extractor spring and plunger. During the past 20 months approximately 800 have been replaced. An excessive amount of breakage has been noted after the guns were used in preliminary exercises during dry, dusty periods. The trouble generally could be traced to DIRTY CHAMBERS.

There are 360 caliber .45 pistols in regular use by the instructional groups. In the past year approximately 1000 front sights have been replaced. They are held by one small pin and during constant firing become loose and are lost.

One procedure has been developed on the Thompson submachine gun which has reduced part replacements to almost zero. Shortly after the department opened, the full-length recoil spring was used in mechanical training. With the guns being torn down so frequently by recruits, there was a great deal of bending and kicking of recoil springs. Slightly shortened springs were placed in the guns for mechanical training and the longer spring used during actual firing. That ended the difficulty.

The life of machine gun barrels is from 10,000 to 12,000 rounds. It is believed that excessive headspace has been one factor that has caused barrels to wear out after this amount of firing. In 20 months, however, only 48 have had to be replaced. Other parts of the machine guns have proven very durable. Only six bolts have been worn out by the 140 guns in use by the department.

The CRTC Weapons Department will continue to give recruits basic training in their arms, but every effort is being made to keep pace with battle developments and new methods of training.

There is no feeling that the department is sending out to units in the field the finished rifleman, the real machine gun technician, or the pistol expert. But it is believed that when these men go out from Fort Riley they have an excellent foundation on which to build. They are men whose troop training will soon make them "ready on the firing line."

Motorcycle Training

*by Lieutenant L. C. Alexander**

THE general impression is that anyone with long legs can ride a motorcycle, but experience at the Cavalry Replacement Training Center has shown that it takes much more than that. It is not always enough to be able to use the controls properly. Many times it is necessary to "man-handle" the machine and this requires a well built, strong physique.

As the incoming soldiers arrive at the C.R.T.C., the classification section assigns all experienced motorcycle riders and all potential riders (those with the proper requirements) to one certain troop for three weeks basic training, after which they are given nine weeks instruction in the Motors Department.

The Preliminary Phase

Following an introductory tour of the various buildings, trainees are taught the functioning and nomenclature of the major assemblies of the motorcycle, fire prevention and control, safety precautions, road rules and traffic regulations, inspections, and the use of the various controls.

These lectures are given by the commanding officer of the Motorcycle Division, and every possible visual aid and technique of instruction is used to make them interesting. Wall charts, cutaway models, and stripped machines are used, and the student is shown how the various units of the machine are fitted together.

Training films on riding come next. After having been told how to ride and then shown how, the great day arrives when the trainees try it themselves. A period is spent on starting the engine, and during the latter

Trainees receive an introduction to cross-country riding.

*Motorcycle Department, CRTC.

part of the period, the machines are put on the center stands to permit the trainee to practice gear shifting and to get the feel of the throttle and clutch. Finally, the machines are placed in column on a large circle and the command comes to crank up.

After riding in all gears on the circle, the trainees then are taught to ride in column over fairly simple terrain. Individuals who do not progress as rapidly as the rest of the group are segregated and given special instruction.

One constant task faced by the officers and cadre of this division is the problem of overcoming "original fear" of the motorcycle, common with many men. The only way to do this is to make the man ride. The more he practices starting, stopping, shifting gears and turning circles, the more familiar he becomes with his machine, and the sooner self-confidence is acquired.

While the mounted group is learning to coördinate clutch, acceleration, balance, and proper gear selection, the dismounted group reviews the basic subjects of functioning and nomenclature, arm signals, road rules and traffic regulations, and inspections. Students are also taught such subjects as block control, convoy operation, first echelon maintenance, the use of the driver's accident report and driver's trip ticket.

The Advanced Phase

The advanced phase consists of 30 lessons in the second three weeks of the course. The trainee is taught to ride over more difficult terrain such as hills, sand, ruts, mud, snow, and ice. Individual performance is stressed, and every effort is made to permit each man to choose his own route cross-country and to use his knowledge of map reading, scouting, and patrolling.

In the lecture room the dismounted groups are taught such subjects as map reading, bridge and road reconnaissance, scouting and patrolling, camouflage, demolitions, security of small parties, selection of bivouac areas, occupation of bivouac areas, and block control. These subjects are then demonstrated in the field. Problems are planned to permit the trainees to use initiative and judgment in applying all the knowledge gained from the classroom.

First echelon maintenance is stressed throughout all phases of training. Once each week this is performed on all motorcycles by the trainees, and an accurate record kept. Each motorcycle is checked by a cadreman before the conclusion of the maintenance period. Field maintenance periods are scheduled so that the soldier can have experience in the maintaining of his machine under combat conditions.

The Tactical Phase

The last three weeks of instruction are spent in field exercises, all-day problems, and maneuvers. In this phase the actual "riding training" is considered completed, and instruction now bears down on the rider's tactical use of his vehicle. The all-day problems usually deal with one subject: *i.e.*, a map-reading problem, or a bridge and road reconnaissance problem.

Trainees start out on cross-country march at 15° below.

The field exercises are a practical combination of all tactical subjects taught in the classroom. Usually the Motorcycle Division joins with another division and works out a tactical field problem. Here again, the individual learns the part he must play in a group.

The final week of the tactical phase is devoted to a four day extended march and bivouac. The various sections of the Motors Department combine to form a provisional reconnaissance squadron, usually composed of 100 vehicles and 500 trainees. With the officers of the Motors Department in command, the trainees move out into the field.

In the tactical situation that follows, some of the trainees form an enemy group, while the main group sets up a bivouac after an all-day march and puts out its security elements. This march and bivouac are actually the "graduation test" for all the training divisions. The second night out a forced night march is made and a new bivouac set up under combat conditions. Members of the enemy detail and members of the Cavalry Replacement Training Center S-3 Department attempt to infiltrate through the outguards.

Each basic subject taught in this division is reviewed at least three times. Safety precautions are reviewed each week with excellent results. The accident rate is low and mechanical breakdowns are infrequent. The training mission is accomplished if the men learn nothing more than how to ride and take care of their machines; however, they also learn many more things about application to situations.

(Editor's Note: *The Commanding General of the Cavalry Replacement Training Center would appreciate any comment from commanders who receive motorcyclists from this camp.*)

Training Mechanics at C.R.T.C.

by Captain H. J. Crase, Cavalry

WHEN the first officers and men reported at the C.R.T.C. Motors Mechanics School, the first undertaking was the collection of all sorts of salvage material from reclamation yards. At that time nothing definite had been published on shelter, type of course, number of students, schedule, or date of opening. The problem had to be attacked from all sides as the situation unfolded. Salvage material included wrecks, I & I'd vehicles of available late models, units, unit assemblies, old beds, steel fence posts, old bakery racks, bread-mixing troughs, casters, and even baby bath tubs, which made fine parts-washing pans.

Since "a picture is worth a thousand words," work was begun on instructional aids such as cut-away and exploded models, display boards, and charts. Instructors had little experience in this type of work. A few tools were borrowed from the Motors Department, a power wood saw was purchased and a power hack saw, resurrected from salvage, was rebuilt to eliminate many hours of tedious hand labor.

Balanced stands were designed to support the dead engines. These welded steel stands were mounted on casters, as were the stands for heavy chassis units. By the use of stands mounted on casters, available space was used for a number of functions with a minimum of heavy lifting. This proved to be a practical idea in view of the experimental nature of the first class. All available room was used, and space planning eliminated interference between noisy and quieter classes.

Live engines were mounted on welded steel stands. Radiators and fuel systems were mounted individually. An overhead duct with outriggers was run the length of the engine room. (Each engine exhausts through a flexible tube leading to the duct, and gases are blown out by means of a fan set in the wall. Additional fans take care of any leaks that might develop in the overhead system.)

★Cavalry Replacement Training School.

1—6,000-mile maintenance check. 2—Vehicles undergo 1,000-mile maintenance check.

Training

Fortunately, representatives of the Replacement and School Command Motor Training Council met and discussed training facilities about this time. They made a study of the driver and mechanic training problem and offered recommendations, which the C.R.T.C. Motors Mechanics School followed closely.

The schedule included three weeks of Basic and Weapons instruction and then ten weeks of daily training in learning how to be troop mechanics. Interspersed in the schedule of technical training were periods set aside for physical training which ranged from close combat fighting to close order drill.

Many schedules were written, discussed, and altered. *Experience and practice dictated many necessary changes.* This ten weeks of instructions was broken down into the Engine, Chassis, and Operation Phases. These phases started from scratch with few tools, fewer units, and a heaven-sent pile of scrap.

The first class entered the school on October 5, 1942, with subsequent groups beginning at three week intervals. This staggered system provides a steady flow of men in all stages of training without overburdening facilities and instructors. Instruction is divided into three phases:

Engine

The engine phase is divided into three sections, with a total of 112 hours for conferences and practical work. The first section takes up the operation and construction of internal combustion engines. Dead engines mounted on balanced stands are provided for the use of the trainees in practical work of disassembly and assembly of engines. All related adjustments to the engines are made first on the dead engines and later on live engines mounted on steel stands.

Basic electricity and motor vehicle electrical systems are studied in the second section. Cutaway and exploded models together with motion pictures, film strips

and charts are widely employed to supplement conferences and practical exercises. Electrical hook-up boards are used by the trainees in practical work.

The third section of the engine phase takes up the fuel system. Again demonstration boards and cut-away models are widely employed, and conferences are supplemented by film strips and charts. In all phases, particular emphasis is placed on practical work with conferences held to a minimum.

Chassis

The chassis phase is divided into two sections.

The power train section is allotted forty-five hours for conferences and practical work on clutches, transmissions, transfer and axle assemblies. Enlarged models of all power train units, as well as cutaway models, are available. These are used in conjunction with disassembly and assembly units. Such units as transmissions and transfer cases are mounted on bench racks, while axle assemblies are mounted on caster equipped stands.

The brake and steering section has thirty-nine hours allotted to cover the types of brake systems, springs, shackles, shock absorbers, wheel alignment and steering geometry. Live vehicles are used in most of the work in this section to augment charts and cut-away models.

Operation

One hundred and fifty-one hours are given to the operations phase of the course. Of prime importance in this phase is the practical application of principles learned in the foregoing phases. This practical applicaton is accomplished through the medium of 1000 and 6000-mile maintenance inspections.

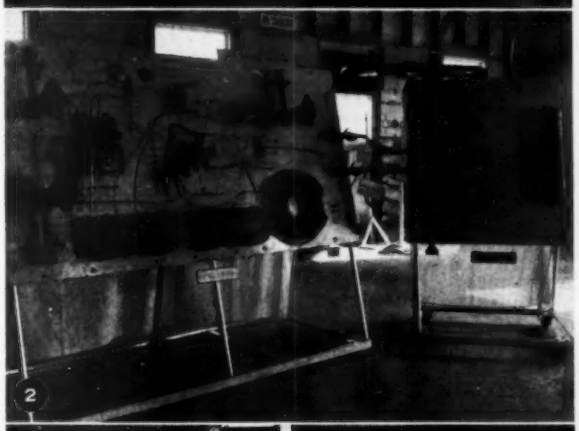
Also of widespread interest and of the utmost importance to field organizations is the selection and training of drivers as well as instruction in 1st echelon maintenance. Thirty hours is allotted to this particular part of the phase.

Additional time is devoted to such subjects as march maintenance, methods of instruction, operation in cold and desert countries, loading and lashing, movement by rail and water, new vehicle service, and field expedients.

The maintenance of "field ranges" is given considerable time—which brings to mind the old saying, "An army travels on its stomach"—and may furnish a clue as to why some field organization commanders delegate the post of cook's helper to a second echelon mechanic.

Throughout the course, emphasis is placed on the fact that the trainees have to be made into soldiers as well as mechanics. Tactical principles covered in the basic training must be gone over time and time again to bring home the stark fact that a dead mechanic is no good to any organization.

1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3

4

1—Trouble shooting on stationary engines. 2—Air brake demonstration board-chassis phase. 3—Study of dead engines. 4—Study of live front axles—chassis phase.

Training Military Instructors

by Major Curnel S. Hampton, Cavalry*

TEACHING is the art of making men learn. Learning is the process of acquiring experience.

The test: Ability to perform as taught.

Objective: Capable soldiers.

Soldiers are required to listen to their officers. Since most officers spend about eighty-five per cent of their time teaching, this requires a lot of listening by the soldiers. Therefore, an officer must appreciate the difference between "having something to say" and "having to say something." In these times, untrained men are quick to detect, and even resent, time wasted. Drivel and aimlessness on the part of an instructor bore and antagonize soldiers.

Observers who have recently returned from the fighting fronts point out the value of teaching fundamentals to the soldiers. Those fundamentals of weapons, motors, tactics, and communications must be taught by officers thoroughly schooled in the fundamentals of teaching.

The late Knute Rockne said it. "We beat them with fundamentals. My boys simply ran harder, blocked harder, tackled harder. They held onto the ball. That's important. Razzle-dazzle makes winning a matter of luck."

Instruction in fundamentals is as thorough and interesting as competent instructors can make it: A capable instructor has two jobs to do. He must teach the essentials of the subject matter and at the same time, teach his *students* how to teach.

At The Cavalry School, the officers of the Staff and Faculty, the student officers, and even the candidates for commission, are required to attend a course on the fundamental technique of instructing.

All students have the opportunity to develop further the leadership ability which they possess, so that they should go back to their organizations with a better understanding of what makes instructing effective. They learn by actual experience, ideas, and methods to overcome the effects of fatigue, resistance to learning, and the common training area inertia among their men.

The course, Technique of Instructing, provides preliminary instruction, constructive criticism and assistance, and a limited but valuable amount of actual experience in preparing and presenting military lessons. Each student performs individually twice and benefits from the personal attention given him by his classmates and the faculty member in charge. The number of hours allotted varies with the type of class, in order that emphasis can be placed on appropriate aspects. For squadron commanders and staff officers, monitoring procedure and the supervision of instruction are stressed. For Basic Officer and Officer Candidate Classes, the preparation and presentation angles receive the major emphasis.

The Personal Factor

Teaching precedes combat leadership. It is a brain-to-brain process that produces hand-ability. It requires a special ability which can be developed.

The *sequence* of saying and doing things, more than anything else, makes the teaching process. Common sense and strong personal qualities are more essential to it than refined facilities.

One of the first things an officer must understand and believe in is the difference between an expert and a good instructor. An expert is one who is able to do something superlatively well himself. An instructor must be able to transmit his understanding and proficiency to other men. Essentially then, a good instructor is an expert with a *strong sense of communication*. He must know and *believe* in what he is talking about, make sure that his men know and believe in what he is talking about, and say only those things that are worth saying. He must give his men not only the *what* and the *why*, but the *how*. He should teach with the spirit and zeal of an evangelist. If his men perform satisfactorily, he is successful. If they do not, he fails. There is no better way to judge the effectiveness of instruction.

For example, down in North Carolina, a man by the name of Buford acquired a considerable reputation as a rabbit hunter. Every time he went afield, Buford came back with his game bag full. Others, failing, came to

CHARACTERISTICS OF GOOD MILITARY INSTRUCTION

Key-word card aids establish "Thrust Lines" for a period of instruction.

*Department of General Instruction, The Cavalry School.

him for advice. He had something they wanted and needed—a perfect set-up for instruction. Buford gave them a great mass of topographical information which included going down to Van Ocker's place (and with Van Ocker's permission), turning right around the barn, proceeding so many yards along the creek and across country to the remains of the rail fence. It was there, he told them, they should sit down and wait until dusk began to settle. "Then," he said, "make a noise like a turnip. The rabbits will come to you. Jest hit 'em over the haid and put 'em in the bag." *But* . . . he could not tell them *how* to make that certain noise—the very thing they needed most to know. Buford was an *expert,* but he failed as an *instructor.*

The factors which insure a good sense of communication are: Voice, Language, Body, and Eye Contact. Together they compose *attitude.*

Voice. Voice is the instrument of instruction and command. A lazy voice has no place in military training. The speech of instructing is that of sincere animated conversation. A voice of fine quality is desirable but not essential. Clarity and power are what is needed. The voice must be projected. Every word must be understood.

Any normal individual can develop the kind of voice that an officer should have. The "chest" voice, as distinguished from the "head" voice, is best. It is cultivated by relaxing the muscles of the chest, neck, and those that control the larynx. This allows more air to be pushed up through the windpipe to the vocal cords by action of the diaphragm, commonly called the "belly muscle." Certain exercises are recommended in FM 21-20 (Physical Training). Words must be sounded distinctly. The tongue, teeth and lips are parts of the voice mechanism. Each should be used deliberately to "shape" words. *BITE LEATHER!*

Language. The purpose of language (words) is to enable men to understand each other. The best word, therefore, is the simplest word that will do the job. Good words make good pictures, and color both conversation and instruction. They gain attention, create and hold interest, and seldom are misunderstood. A military instructor calls a spade a spade. Correct nomenclature is stressed. There is a professional manner of speaking. The instructor should name things correctly but use his *"color"* words to put instruction across to his men. If an instructor's "color" words are peculiar to a section of the country, whenever necessary to complete understanding, he should define them. Thereafter they contribute much towards making his instruction lively and interesting.

The object is not so much to impress soldiers with fifty-cent words and long compound sentences, as to give them the things that they need to know in "nickel" words. The good instructor uses the language of football, baseball, hunting, and other common experience activities with which he has determined that his men are familiar. From these he draws his analogies, incidents and examples. One such analogy is drawn from one of the most common experiences of all. The instructor says:

"You all have had the experience of being in bed on a hot night and trying to make yourself comfortable. After hours of tossing and rolling around you finally dozed off to sleep. Just about that time you were annoyed by the buzz of a pesky mosquito. You tried to disregard it, but he bit you on the arm. You made a wild slap, not knowing whether or not you had killed the little devil. The itch made you scratch; then you itched in several places. More scratching until you were wide awake. You got up and turned on the light and looked for the mosquito. You didn't find him. Back to bed you went, scratching and restless. Out of nowhere, came the mosquito to dive and drill you; this time in the chest. You wondered whether the same one had moved from one location to another, or whether there was a swarm of several thousand of them. Of one thing you were certain. That mosquito certainly had *mobility, fire power,* and *shock."*

This is an indelible picture based on an assumption of a common experience. The analogy makes its point. The mosquito can be visualized maneuvering, arousing, angering, and confusing its victim, and seizing opportunities to harass and attack suddenly at any point on the perimeter—the characteristics of cavalry.

Body. The body talks. What it says must confirm the spoken word. The way an instructor stands, moves, and holds himself suggests either muscle tone or the lack of it, confidence or doubt. The body can, and many times does, contradict what is said, and thus depreciates the total attitude. Poor posture (slumping, humping, and sagging), meaningless movement, awkward wind-milling of the arms, weight shifting, quick, jerky mannerisms, all distract from the idea being expressed. Undesirable body habits indicate a lack of control and a failure of mind over matter.

Attitude. An instructor's interest is contagious. His voice, words, body, and eye contact convey it. Involved

VOICE TYPES

Shown by colored glass Balopticon slides supplemented by voice recordings. The natural voice is that of animated conversation. Change of pace and clarity are essential.

in an interested attitude is a quality arbitrarily called force. It is one of the "Imponderables." In common language, force is "guts and gumption." The good instructor avoids the following negative mental attitudes:

"Off-the-cliff"—"I guess you can tell I'm on the spot, I've got to do my chore and you've got to listen, so here goes."

"Cookie-pusher"—"You be considerate of me during the lesson, and I'll be considerate of you during the performance test. I may not know my stuff, but I'm a good guy."

"Saturday-afternoon"—"This is just one of those things. It's a bit irregular and I can't see why it was included in your training. Take it or leave it, and we'll be off to the races—and quick like. The old man will never know the difference."

"Tired old man"—"I had a hard night last night—I've worked hard all morning and the end is not in sight. It's obvious that I can hardly move, so don't expect very much. You know I've done this many times and really know my stuff, but I'm somewhat cold on the idea. Bear with me. I don't expect very much. Doesn't time go slowly? Perhaps we'd better call the whole thing off."

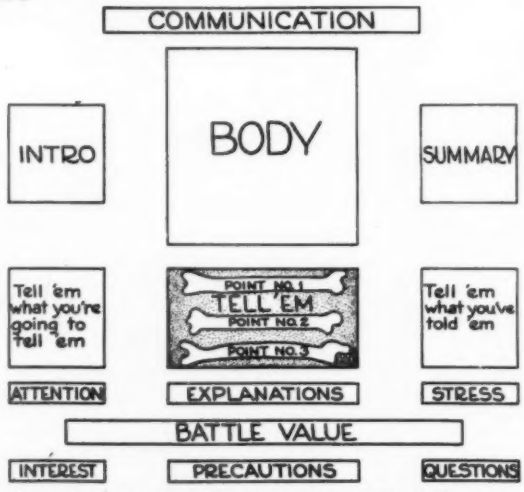
Laws of Learning

The instructor should be familiar with the three simple Laws of Learning. They govern the teaching process. While admittedly there are many ways to teach, there is only one way to learn. The laws are *Readiness, Exercise,* and *Effect.*

In substance, these laws say that if men are to learn they must:

1. Be made ready to learn. Attention, interest, and desire must be stimulated and maintained. An instructor must realize that truth and make use of it.

TECHNIQUE OF INSTRUCTING MANUAL
PLATE NO. 2



PLAN FOR INSTRUCTION BY VOICE
Appropriate for a single explanation or an entire phase of instruction.

2. Understand in detail what is required of them. The instructor's sense of communication is essential. He must give his men the *what, why,* and *how* of each movement and procedure to be learned.

3. Be given adequate time for "trial and error" experience.

The instructor must be quick to detect errors and correct them. Incorrect performance, if repeated several times, becomes habit which is difficult to break. However, the instructor who expects everything right the first few times a unit of learning is applied, is a wishful thinker. Early blunders are only signs of learning. The instructor must exercise *common sense, patience,* and *energy*. Violation of any *one* of the laws is fatal to the teaching process.

Mechanism of Instructing and the Lesson Plan

How does a good instructor prepare himself to teach, and actually teach a lesson? Normally, he takes the six (6) steps included in the "Mechanism of Instructing." Refer to FM 21-5 (Military Training). The process should be understood and mastered.

Preparation. There is a *WHY* back of each prescribed procedure in the service. You have often heard it said facetiously that there are two ways of doing a thing—the right way and the Army way. The instructor should rid his mind of that fallacy. The procedures of the service are the results of sound thinking and long experience. To teach prescribed methods is to sell belief in their adequacy and rightness.

Preparation obligates the instructor to anticipate questions his men may ask. This practice insures thoroughness in preparation. The service is wealthy with training literature. There are Field Manuals, Technical Manuals, Army Regulations, and War Department Training Circulars wherein he finds exact information. He makes full use of them in his teaching and leadership.

The first step involves more than finding the appropriate Field Manual, Training Manual, or Technical Regulation, reading a few somewhat pertinent paragraphs, and then preaching a hodge-podge of ideas. First, the instructor appraises his material. It consists of facts, ideas, reasons, some relevant and some irrelevant, some absolutely essential, and others only desirable. It is the *LESSON PLAN* that determines what portion of all available material will be used. With his objective clearly in mind, he evaluates and selects the "bone" points of his phase of instruction. He discards ideas that do not fit. Next he arranges selected material around two or three fundamental ideas. It is important that the number of these fundamental ideas be kept to the minimum.

Explanation.—The instructor should tell the student *WHAT* he is to learn and *WHY* he is to learn it. The explanation should be *complete* in detail, *i.e.,* exactly how, when, and where the information will be of practical (battle) value.

The instructor prepares the mind of each of his men for the explanation by referring to the *known* before he introduces a single *unknown* item. He explains the thing or things to be learned in terms of his men's own personal experiences and needs. He speaks their language.

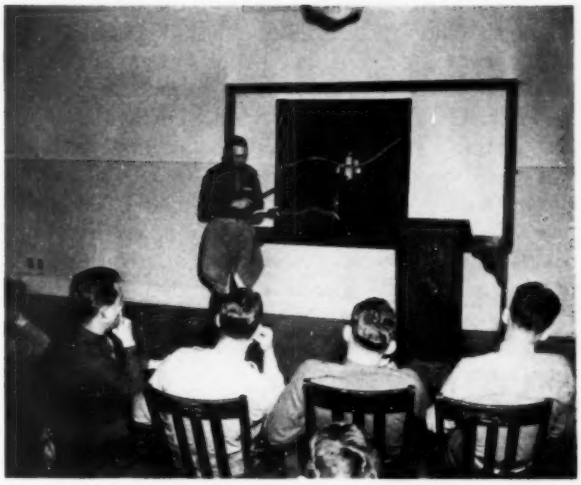
What is "new" catches the attention—a new sound, a new movement, a new word on a printed page. But the *"new"* does not *hold* attention unless it is in part familiar, unless it springs from personal experience. It is the new combined with the familiar that grips attention and arouses active curiosity and interest. Such details, facts and illustrations as come most fully within the knowledge and experience of the men, will bring the subject most vividly to their minds. This is known as the *principle of reference to experience.*

Example: An instructor may teach the physiology and the anatomy of a horse by analogy to the human body, its muscles, bones, tissues, and functions; or, in describing the sensations and effects of a sternutator gas, he may say: "A good whiff of Adamsite will choke and poison you. Remember how it used to feel when you were swimming and you got your nose full of water? For a moment it seemed that you were going to strangle —and then even after the sensation passed, you sneezed violently and experienced nose pains?" By using a reference to experience, an instructor makes his men more suggestible; they see, feel, accept, or do the thing desired of their own free will and through their own experience.

An instructor must be capable of supporting any statement he makes. It is unnecessary to support every assertion; some are understood readily and accepted by the learners. To enter upon a detailed explanation of that which is readily apparent, or to waste time in lengthy proof of a self-evident truth, presumes a low degree of intelligence on the part of the men undergoing the instruction, which will tire or disgust them, and reduce the effectiveness of the explanation. The decision as to what assertions will require support and what kind of support they will require is the responsibility of the instructor. Narratives, analogies, comparisons, and contrasts strengthen the explanation.

Demonstration.—A procedure or a sequence of operation is made clear, step by step. A carefully rehearsed demonstration *simplifies* instruction and makes essential points stand out boldly. The instructor, if he chooses to use the demonstration, must be expert. Obviously, the instructor must "know his stuff." The blind cannot lead the blind. Students attach far greater importance than may be thought to their instructor's professional knowledge. If they find weak links in his armor, he loses prestige. The use of an expert assistant or a well-trained group frequently is advisable.

Application.—Normally, an individual cannot be expected to develop skill or perform satisfactorily unless he is given the opportunity to apply the "lesson points" of a phase of instruction several times under patient, intelligent supervision. Gradually the mechanics of an operation or movement become *second nature* with him. Each movement is broken down into a series of motions for practice.



THE WRONG WAY
Instructor who "throws the book" loses the confidence of his men. Reading is *not* teaching.

The instructor must be quick to detect and correct mechanical errors resulting from merely going through the motions, or ill advised attempts to improve upon prescribed method.

The instructor should be alert to the advantage of stimulating competition among those undergoing training with a view to raising the standard of proficiency of the group. Justness, encouragement, and *quick recognition* of good performance are essential to all-out effort.

Examination.—The purpose of the test or examination is twofold: (a) by it the essentials are reviewed, and (b) by it the instructor can check accurately on the effectiveness of his teaching—that is, he makes a test for understanding.

During mobilization training for combat, there is insufficient time to make the test or examination a formal one. Preferably it should be a performance test—one that encourages the student to strenuous effort.

Real benefit lies in requiring the soldier to apply principle to combat situation.

Discussion.—No lesson is complete until an instructor gives his men an opportunity to clear up any specific points he has failed to understand. *Discussion follows the lesson summary.*

Instructors must prepare beyond immediately needed details. They must be able to give sound reasons in answer to "Why?" questions and little angles on "How" not covered in the book. An analysis of experience and observation is an obligation.

The best thinkers in the military service have created by trial-and-error experience an almost fool-proof method for preparing and presenting a military lesson. The

term "fool-proof" is used advisedly in the sense that the method is simple, and its results are shown to have been highly successful over a long period of time.

Most of us are familiar with the historic sequence of INTRODUCTION, BODY, and SUMMARY. The best cornfield language explanation of that sequence was given by an old chaplain with one of the colored cavalry regiments. It appears that this old gentleman had a very compelling way about him, in that every Sunday his chapel was crowded with troopers eager to listen to him. His sermons were stories and parables. His examples were powerful. His words made pictures. They listened to him and understood him. He spoke *their* language. When asked once how he generated such power, he replied: "Ah has a plan. First, ah tells 'em what ah'm going to tell 'em. Then ah tells 'em. After that, ah tells 'em what ah told 'em."

The practiced and recommended sequence for presenting a military lesson is based on that explanation.

Visual Aids

Major emphasis is placed upon simple, inexpensive devices which can be improvised and used by instructors under field conditions. It is pointed out that instructing officers cannot expect to be provided such facilities and equipment as are now in use at the Cavalry School. It is clearly established, however, that the lack of a Reproduction Section and preferred materials does not provide an alibi for the instructor within a field unit who fails to use his "imagination muscle" to create visual training aids.

It is shown that by careful planning and persistence, all instructors in field units can obtain for their use training films, film strips, maps, charts, and diagrams prepared by the various agencies of the War Department. Rough charts, inexpensively constructed portable blackboards, and simple devices which strengthen teaching by voice and demonstration are explained. Detailed information is given on how to construct such easels from scrap wood and sandtables from assorted waste materials available. Sawdust, powdered chalk, leaves, sticks, small pieces of wood, metal and leather can be used on the sandtable in lieu of decorative foliage and costly prepared miniatures. For example, drum type cheese boxes are good base material for effective large-scale models of compasses, and working models of the reticle and clinometer can be improvised quickly from scrap cardboard.

Aids to be used out-of-doors are stressed. Even the earth's surface, with a little preparation, provides an effective medium for quick diagrams and sketches.

Applicatory Phases

The class, divided into five or six small groups, meets in corrals, on the drill field, and elsewhere out-of-doors. It is The Cavalry School policy to make instructional situations as real as possible. Officers must learn to teach in situations in which distractions are frequent. They must learn to overcome these by *compelling* rather than by *demanding* attention.

Students plan and present two short phases of instruction. They present these lessons not as members of a class to their classmates, but as officers to their men. This is to a good purpose. The student instructor is told to assume he is trying to reach the minds of men who normally know less about a particular phase than he does. In this way, he is reminded to keep his lesson simple, use repetition *interestingly*, and stick to his phase. *He takes nothing for granted.*

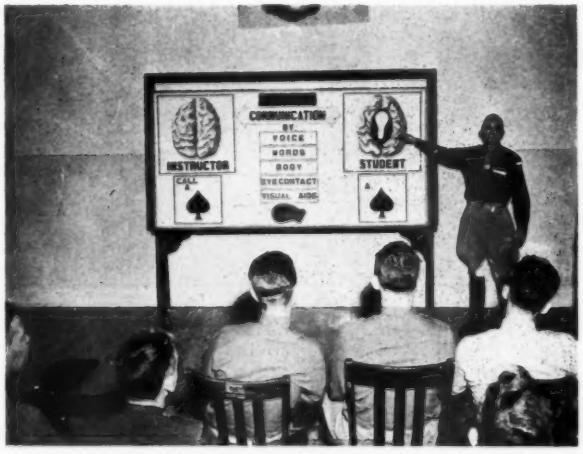
While each student speaks, other members of the group make such notes as enable them to offer sound *constructive criticism.* It is a fundamental upon which repeated stress is placed at the Cavalry School. The error is pointed out, the *exact how* of better performance is given, and the question "Why?" is answered. Example: "That performance (statement, act, manner) was incorrect for these reasons. . . . To improve you should. . . . The reason for this method is that it. . . ."

The following *negative* aspects of criticism are discouraged:

"Throat-cutting." A practice of the bigoted or prejudiced individual who thinks he can make himself "a big shot" by criticizing just to ventilate a personal grievance. He uses sarcasm and ridicule to embarrass an individual on the spot.

"White-washing." An indecisive, loquacious effort by one individual to cover up obvious errors made by another. It is saying something is right when it isn't. The officer who gets into the habit of overlooking weak, slovenly performance to make himself a "good fellow" with his subordinates, is not functioning as an officer.

"Don't-know."—It is an officer's business to know. He must develop a critical eye, a critical ear, and a critical mind. He must observe, evaluate, and express opinions backed up by *"Why's"* and *"How's"* if he is to lead men. Straight thinking and straight speaking marks



COLORFUL PANELS COMPEL ATTENTION
This one "Trade-marks" the first hour of preliminary instruction.

the leader. Failure to criticize or correct constitutes approval in the eyes of the individual performer.

"Bull-moose."—Lots of voice. Lots of words. Shouts and storms. Offers no encouragement. Enlarges upon little things—and misses the big ones.

To make sure that men undergoing the instruction look for and evaluate the right things, they are furnished an "instruction check list." Items included on this check list are:

1. *Appearance and Presence:* (Consider neatness, posture, bearing, facial expression and animation.)
2. *Introduction:* (Consider method and sufficiency—did he "tell 'em what he was going to tell 'em"?)
3. *Battle Importance:* (Consider mention, strength of reference, repetition.)
4. *Body of Lesson:* (Consider "bones and meatiness," logic and sequence—did he "tell 'em"?)
5. *Authority:* (Consider familiarity with subject matter and evident preparation.)
6. *Communication and Group Contact:* (Consider eye contact and language—did he speak *to* them or *at* them?
7. *Precautions and Safety Items:* (Consider mention, strength of reference and repetition.)
8. *Voice and Expression:* (Consider quality, strength, enunciation and fluency.)
9. *Visual Aids:* (Consider quality, use, reference and timing.)
10. *Lesson Summary or Conclusion:* (Sufficient? Apropos?—Did he tell 'em what he had told 'em?)
11. *Attitude:* (Consider interest, enthusiasm, and force.)
12. *General Rating:* (Opinion of the man and his presentation—general.)

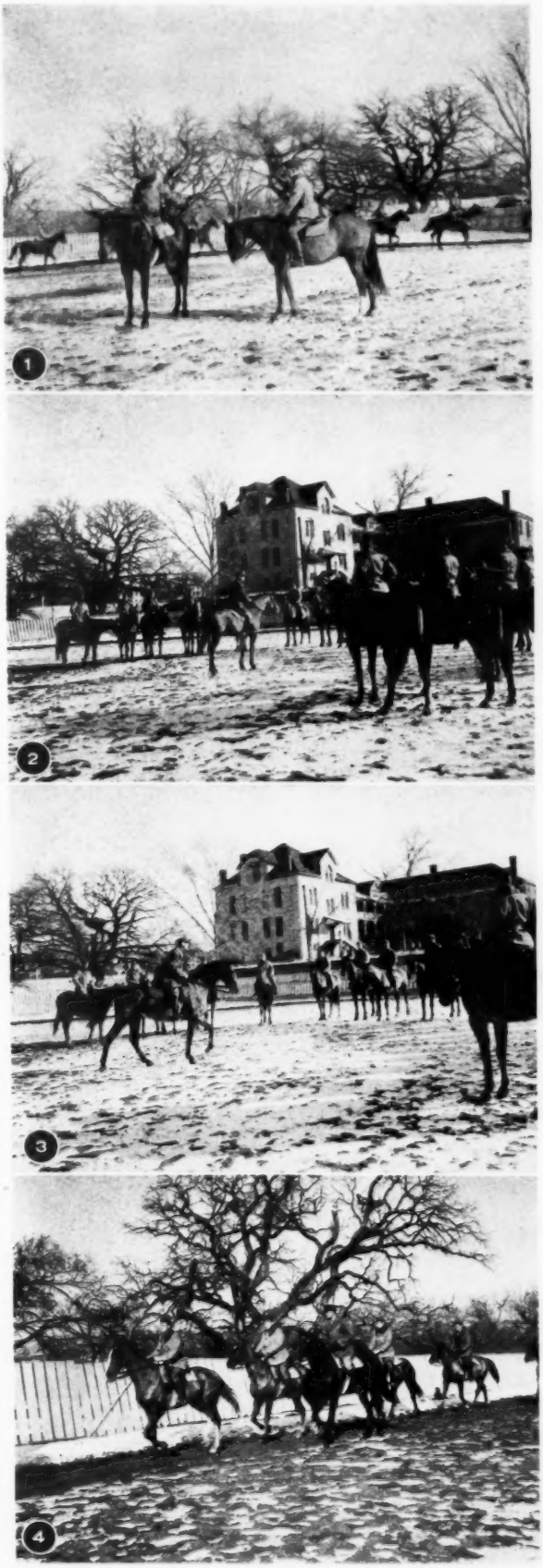
In addition to those points, students are reminded frequently of the four "S's" of good instruction. These are: (1) *Sincerity;* (2) *Soundness;* (3) *Sequence;* (4) *Summary.*

Clinic

Between the first and second applicatory exercises, all groups of the class meet together for a critique on the first assigned phases of instruction. During this period voice recordings are played back for comment. Photographic glass Balopticon slides prompt clinical discussion on attitudes, mannerisms, and visual aids created and used by students.

Conclusion

The foregoing method for teaching how to teach has been found to be productive of good results at The Cavalry School. Comments made by students, former students, and commanders of field units support that statement. It is a method based on an old fact that men learn by doing. Even a little *doing* appears to be more remunerative than a lot of listening.



1—Individual attention strengthens the teaching process. 2—Second Step: Explanation of *what, how,* and *why.* 3—Third Step: Demonstration. 4—Fourth Step: Application. Without interrupting practice, constructive criticism is given.

TESTS IN HEAT AND COLD

*by Lieutenant Robert M. Pollock**

SCIENTIFIC testing of vehicles and armament has long been practiced by ground force organizations of various armies. Ordnance proving grounds have constantly striven for new perfection in machines and weapons. Lt. General Jacob L. Devers, Chief of Armored Force, foresaw the need for going beyond experiments with equipment. Equipment is only as effective as the men who operate it. Accordingly, the Armored Force is now determining reactions of its men to certain climatic and work conditions and ways and means of improving effectiveness of these men.

Details of the Armored Force Medical Research Laboratory at Fort Knox were worked out by Brigadier General Albert W. Kenner, former Armored Force surgeon. Funds were furnished by the National Medical Research Council, and on August 15, 1942, work got underway. In a $300,000 glassbrick, concrete building, officers and men of the Medical and Sanitary Corps began their experiments. The building contains, in addition to splendidly equipped chemical and physiological laboratories, two vast rooms for work in extremely high and low temperatures.

Striking features of these rooms are their abilities to simulate the extreme climatic conditions under which Armoraiders may be called upon to fight. The hot-room can be heated to a temperature of 150 degrees Fahrenheit. With the future addition of huge lamps, intended to reproduce the radiant energy of desert sunshine, this temperature may be raised to 175 degrees. Through controlled humidity, either the desert or the jungle may be transplanted to Fort Knox.

In contrast to the intense heat of this room, stands its next-door neighbor, the cold-room. Here, by means of an immense refrigeration unit, room temperature may be lowered to 62 degrees below zero. The process used in cooling the air in the room may be so concentrated that an artificially produced gale of thirty-five miles an hour wind velocity results.

Lt. Col. Willard F. Machle, commanding officer of this Armored Force Research Laboratory, heads a staff of expert technicians. These men, constantly engaged

*Headquarters, The Armored Force.

Sub-zero temperatures in the cold-room of the laboratory are graphically shown by the ice on this tank and the bulky, but comfortable, clothes of the Armoraiders emerging from this M-4 tank. Experiments in this room are usually conducted at 30 degrees below zero.

in seeking new scientific data, regarding reactions of men in the Armored Force to conditions that they may have to face in combat, have developed a series of experiments to gain their ends. Perhaps the most intensive of these at the moment are work experiments within the hot-room. Here, groups of men (the highest number has been 17 at one time) eat, sleep, work and rest under conditions quite different from the Kentucky climate just outside the walls of their laboratory.

In heat that reaches a peak of 120 degrees during the day time and a low level of 75 degrees at night, with humidity similar to that encountered in the desert, these men perform certain work exercises. Their body reactions—that is, temperature, pulse rate, and blood pressure—are constantly checked by staff members on duty in the hot-room.

The previously mentioned 17 men lived inside the hot-room for 26 days, longest experiment yet undertaken. For several days, they performed the exercise routine, rested, ate and slept under normal temperature conditions. Their reactions to the work routine were carefully noted. Then came the extreme temperatures. Again their reactions were tabulated. When the temperatures first rose, the ability of all the men to perform work slumped below their ability at normal temperatures, but when these volunteers became acclimated to the extreme heat, they were able once more to do their duties with a minimum of body reaction. A comparison of their working abilities before and after high temperatures began in the hot-room, gave these laboratory technicians definite information as to the human reaction to desert conditions and length of time necessary to become acclimatized to them..

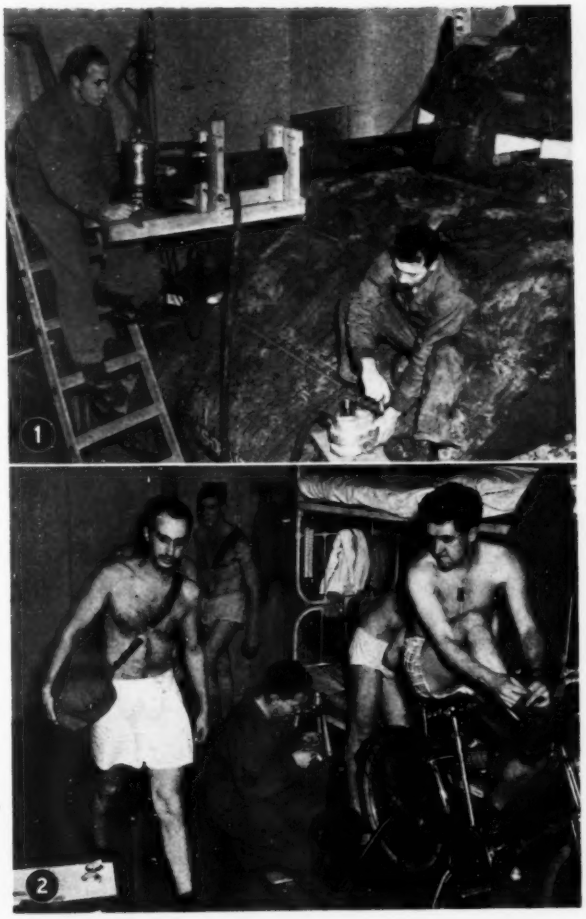
With American Armoraiders already fighting in the African desert, and with the desert perhaps playing an increasingly important part in armored warfare, the results of these Armored Force Medical Research Laboratory experiments may prove an important margin of victory.

Cold-room experiments at the laboratory are limited at the moment to a study of clothing best designed to protect our soldiers from the sub-zero conditions they may encounter in combat. The experiments also include work with various types of food and food containers suitable for Arctic temperatures.

These Armored Force technicians don't stop with testing tanker's reactions to extreme hot and cold. Constantly going on are experiments testing the effects of noise on the nervous system, gun fumes on blood circulation and respiration, visual difficulties on the eyes. Modern laboratories are equipped to study these situations and to take steps to remedy or improve them.

Comprehensive reports on laboratory experiments have been submitted to the proper authorities, and their findings promise to be far-reaching. Already a number of changes in equipment have resulted from these reports. Through experiments wtih the sitting height of the average man and his headspace requirements, sitting room modifications on existing tanks and changes in future tank plans have been made. Provision of adequate water supplies for combat troops has been assured. Generator exhaust at one time contaminated the inside of tanks. Laboratory reports discovered this, and the condition has been remedied. Visual improvements are being considered and mechanical implements within tanks themselves (brakes, gear-shift, etc.) have been changed to simplify operations.

Work continues at Fort Knox in the Armored Force Medical Research Laboratory. Radical work. While machines are being constantly tested and improved in other proving grounds, the men who operate these machines are themselves being tested to improve the fighting efficiency of those on whose shoulders rest the task of winning a war.



1—In important gun-fume tests, gas is pumped through the gun barrel of this 75mm cannon into an M-4 tank. Tests then discover the effectiveness of the tank's ventilation system in removing harmful gas fumes. 2—Several experiments are conducted simultaneously within the hot-room. While three men plod their way around the room with a forty-pound pack, another prepares to mount a stationary bicycle and pedal in place for a ten-minute period.

Care And Use
Of Your
INDIVIDUAL
PROTECTIVE
CELLOPHANE
COVERS
1
TWO COVERS WILL BE ISSUED TO YOU AND WILL BE KEPT IN YOUR GAS MASK CARRIER. KEEP ONE COVER READY FOR USE IN FRONT PART OF CARRIER.
4
SPREAD COVER OPENING.
5
AIR
WITH ONE CONTINUOUS MOTION, SWEEP COVER OUT AND UPWARD SO THAT AIR OPENS COVER.

Defense Against Chemical Attack

The Cellophane Cover, of general interest and of particular importance in Chemical Warfare training, is a new Quartermaster item with which the average soldier is still unfamiliar.

Before going into a field of operation, the individual soldier should carefully unfold and refold the cover, which should be kept ready for imme-

GRASP RED TABS BETWEEN THUMBS AND FOREFINGERS.

KEEPING HOLD ON TABS, RELEASE COVER, PERMITTING IT TO UNFOLD.

CONTINUE UPWARD SWING AND PULL COVER OVER HEAD.

PULL COVER DOWN, PROTECTING BODY AND CLOTHING FROM AIR-PLANE SPRAY.

diate use. This will soften the folds and increase the speed with which the cover can be put on. When the cover is refolded, care must be used in following the original folds. Making the final "accordion" folds from the top down will release any air trapped in the cover. Good care given the cellophane covers and gas masks will be repaid when a chemical attack is met.

The above illustrations give a detailed description of the prescribed manner for the handling and care of this valuable protective.

Care of Animals in the Jungle*

by Captain Benjamin F. Leach, Veterinary Corps

THE successful use of animals in the jungle requires the utmost care and effort on the part of the officers and men responsible for their welfare. Difficult trails, made more difficult in the rainy season by frequent and heavy showers, make all trails through the jungle, trails of mud. Men and animals must be in excellent condition to withstand an extended jungle maneuver, and the jungle is not the place to condition green, or unconditioned, animals. This training must be accomplished prior to the time that the animal is called upon to perform jungle work.

The training and conditioning of animals requires a systematic series of exercise and work in conjunction with proper feeding and grooming. It is generally agreed that it is not practicable to keep army animals at the high peak of condition, but that they must be maintained in a state of condition which can be brought to a high level in a short period of time. Two hours of exercise daily is considered the minimum necessary to maintain animals in a workable condition. Although it seems obvious that horses and mules cannot be conditioned under stripped saddle and packs, this is one form of exercise that is practiced all too frequently and its final reflection is manifested somewhere on a jungle trail by exhaustion and death. The walk is the best conditioning gait for animals that are to be used in the jungle as it is practically the only gait used on jungle trails. A horse or mule is considered in condition when the body can perform without fatigue or injury the work and services required by the organization of which it is a part.

All animal equipment should be in excellent condition prior to jungle marches, as the rain, mud and difficult trails place a severe strain on the best of equipment. New saddles and riggings should be broken in and any adjustment made, prior to an extended maneuver in the jungle. Every effort must be made to keep saddle blankets and the mohair pads and cinches of the pack saddles free from caked mud and sand.

In camp, saddles and riggings must be kept off the ground either by the use of suitable dunnage or improvised saddle racks. The mohair pads should be folded damp side in after cleaning, and placed on top of the pack saddle. Rawhide latigoes have caused considerable trouble in the past, for when wet, this type of leather stretches, causing the cinches to loosen and the load to slip, which eventually results in severe back injuries. The rear cinch on the Phillips Cargo Pack Saddle should not be drawn tight but left loose enough so that the hand may be inserted between the cinch and the animal's abdomen.

In climbing steep trails, the cargo pack saddle has a tendency to slip to the rear, especially if there is a heavy top load. Some animals make a lunging effort while crossing deep mud holes. In both of these instances, mules may be severely bruised in the stifle region by contact with the rear boot hook. This condition can be corrected partially by having all mule leaders tighten the breast collar strap.

The faster moving animals of an organization should lead the march. This prevents delays at difficult points on the trail and possible accidents which may occur when more rapidly moving animal elements attempt to pass slower moving units. Two or three men should be stationed at the more difficult points of the trail to assist animals that may become bogged down and need help.

As it is nearly always impossible for the veterinary officer to inspect animals on the trail at the halt, it is advisable to select a place by which the column will pass on their departure from camp, and note the fitting of packs and saddles and whether or not the loads on pack mules are balanced. If possible, poorly packed or unbalanced loads should be corrected before the animal leaves camp.

At halts on the trail the rider or the leader should inspect the condition of the animal with regard to the fitting of the saddle and the pack and to the balancing of the load.

Animals should be allowed to graze and, if there is an opportunity to water, should be allowed to drink. The individual soldier who rides a horse or leads a mule should be instructed that he alone is responsible for the care and well-being of his animal on the trail and that he must bring him into camp in good condition.

The picket line should be placed on high ground near a suitable watering site, and sheltered from the sun. The underbrush and jungle growth should be cut off level with the ground, for if snags and stumps are permitted to remain on the picket line many animals will injure themselves when rolling. All vines should be cut away and removed from the immediate vicinity of the picket line; otherwise, a good many animals will suffer from vine burns around the fetlocks and pasterns.

Black palm trees should also be cut and removed to a place where there is no danger of animals coming in contact with the thorns. Areas where the manzanita shrub grows must be avoided. The picket line should be four to five feet from the ground and stretched taut between fairly large trees. A picket-line guard should be posted at all times to watch the animals and prevent injuries from animals casting themselves in their own or another's tie-rope.

Animals on the march should be watered whenever an opportunity occurs. Animals in camp should be watered at least three times during the day. The ap-

*Courtesy, *The Veterinary Bulletin*.

Soldiers and army mules, carrying heavy packs, pause at a stream somewhere in the jungles of Panama for a brief rest as the field artillery battery to which they are attached moves up to new positions during war games.

proach to many jungle streams and watering holes requires leveling before more than one or two animals can be watered at one time. One man should not be required to water more than two animals at the same time. Groups of animals should come to the watering place together and leave together if the nature of the terrain will permit. The watering of animals should be supervised by a commissioned officer.

Hay is fed by breaking up the bales and distributing it along the picket line. It should be fed in small quantities and renewed as needed; if too much is fed at one time it will be wasted by being tramped into the mud or soiled with urine and feces. Grain should not be poured on the ground in front of the animals as a large amount of it is lost and the animal picks up a certain amount of foreign material. The use of feed bags is the approved method of feeding grain in the field. The bag should be adjusted to the individual animal and when removed, turned inside out to dry.

Salt is an indispensable item in the ration of an animal, and a daily allowance of eight-tenths of an ounce is authorized. Under field conditions granular or table salt should be used in preference to rock salt, and fed in the feed bag. One full mess kit spoonful of salt should be mixed with the grain three or four times a week.

It is necessary to protect supplies of grain and hay during the rainy seasons of the year by placing on suitable dunnage and covering with tarpaulins.

Injuries from the pack and saddle constitute the most frequent causes for disabilities among animals. Most saddle and pack injuries are preventable if proper care is taken in the fitting of the saddle and care exercised in packing out and maintaining balanced loads. The two physical causes for pack and saddle injuries are friction and pressure. Friction is aggravated by the accumulation of sand and mud which the saddle blankets and mohair pads pick up going through mud and bog holes. Pressure may be aggravated by extra heavy loads and the period of time that elapses between packing out and unpacking.

Every wound or abrasion, no matter how slight, must be treated or carefully watched to prevent screw-worm infestation. All animals in camp should be inspected at least three times a day for egg deposits on wounds and abrasions. Every man in a mounted organization should be taught to recognize the eggs and larvae of the screw-worm fly and the havoc that the fly can cause.

This Royal Artillery Mountain Battery makes its way across a Scottish mountainside, where it is in training.

Animal Transport Companies*

THE LONDON TIMES Special Correspondent with the Army, in a recent message from the Southern Command, deals with the continuing value of horses and mules in the transport of material in every Allied theater of operations. He writes: "When the Highland Division was forward of the Maginot forts on the Saar front, mules were used for transporting material into the outpost line. Later in 1940 it had been planned that the Indian mule transport companies in France should be ready to go to Norway if that country were invaded, but the French undertook to send their own companies. Again, the successful British campaigns in Abyssinia and Eritrea were often dependent on mules and pack horses for transport in the mountainous country, just as were the German divisions that dashed across Greece. And in the Middle East today there is still a useful place for the several animal transport companies—British, Indian, and Cypriot—employed there.

"Here at home, a Transport (Animal) Training Company forms part of the Training Brigade of the Royal Army Service Corps in this Command, and men are posted from it to the animal transport companies at present stationed in the mountains of Scotland. Today the pack horse fulfils the principal function of animal transport, but when a man leaves this training company he has become skilled in most branches of horsemanship. The best recruits for this service are the former drivers of horse artillery, many of whom have volunteered, and next to them might be placed milk roundsmen and men experienced in that type of work. Lads from the superior racing stables seldom take kindly to the inferior task of pack horse transports and farm laborers seem also to have no flair for it, though both are useful for some of the auxiliary work connected with the company.

"At these training quarters, for instance, the excellent condition of the horses and their stables is a sure sign of the type of man selected to look after them. Here the horses in use are a quiet, mixed bunch of hunters, coach horses, chargers, and so on, but for active service mountain ponies from Scotland and Wales are sought. The maximum load of the pack horse is about 240 lb., and in the field the small A.T. cart would be used until pack-loading became necessary, when the cart can be used as a dump.

"It had been thought at first that the very limited number of pack horse companies in the Army could be manned with recruits of comparatively low physique. But it was soon realized that for man, as well as horse, this is very arduous work, demanding strength and stamina. The man, for instance, must be as fit in the feet as any infantry soldier and able to endure long stretches of trudging along mountain paths. He has also to be an alert and resourceful fighting soldier."

**The Veterinary Record.* (British) Vol. 54—October, 1942—No. 41.

Book Reviews

I SAW THE FALL OF THE PHILIPPINES. By Colonel Carlos P. Romulo. Doubleday, Doran & Company, Inc. $3.00.

Colonel Romulo has given the world a magnificent, terrible picture of the bitter, futile struggle to hold the Philippines. He has held up for respect and inspiration the men who took part in that struggle.

Only a Divine Power could have given the strength to hold out as long as they did. "There are no atheists in fox-holes."

It may be trite, but the phrase "written in blood" seems the most applicable one to characterize this book. Its stark tragedy mocks the very freshness of the air we breathe, the food we eat, the luxuries we take for granted.

It is to be hoped that every man and woman blessed with freedom will "read, mark, learn, and inwardly digest" the lessons written here.

* * *

THE STORY OF WEAPONS AND TACTICS. By Tom Wintringham. Houghton Mifflin Co. $2.25.

A book by Wintringham is an event worth noting, for he combines the rare attributes of expert knowledge of military history with actual experience in the field. His excellent literary style makes his books not only valuable but enjoyable as well.

"If we are to survive and be victorious, we must learn the ways of change." The changes in methods of warfare and the weapons employed are covered from the seige of Troy to Stalingrad. The author divides the war periods into six classifications: (1) unarmored period—prehistoric to 479 B.C.; (2) the first armored period—479 B.C. to 378 A.D.; (3) the second unarmored period—378 to 774; (4) the second armored period—774 to 1346; (5) the third unarmored period—1346 to 1917; and (6) the third armored period—1917 to ? In each of these periods he selects the most familiar battles—the most prominent historically to the average reader and, using these as illustrations, shows in each the influence of methods on weapons, and weapons on methods.

There is perhaps nothing new here to the student of military history, but there is coördination of facts, and in coördination many features become emphasized that inevitably slip into the background when studied individually.

Mobility of mind as well as mobility of units becomes obvious in this study of change. Each age has had its diehards; and there is cold comfort for them in the history of their ilk.

The lessons in this book are as modern as Spain, Libya, and Stalingrad. Its chief prophecy is based on the need for light, mobile tanks for use in conjunction with infantry.

INTO THE VALLEY. By John Hersey. Alfred A. Knopf. $2.00.

This is not just another book on the Marines in Guadalcanal and the Solomons. It does not start out to be a pretentious story. The author has pictured a single skirmish and one not too successful from the military point of view.

In all events, the men fighting the battle do not see themselves as part of a large pattern but rather the pattern as part of themselves. Thus, the personal angles of situations become important in the same proportion that they fade from prominence in the larger scene. In this, Mr. Hersey has succeeded in giving us more than a mere accounting of a battle with the pictures of a few specific personalities. He has produced a book that is made up of the little things that are of importance to the men concerned at the moment in any area of warfare.

These are real men, not shadowy characters. They may have lost this engagement; they may lose many more, but ultimately the man who can control psychological fear by the tone of his voice and the simple question, "Who gave that order?" must eventually lead his men to ever more frequent successes.

* * *

POSTMORTEM ON MALAYA. By Virginia Thompson. The Macmillan Co., 1943. $3.00.

In her books on Thailand and French Indo-China, Miss Thompson has already proved himself to be a penetrating analyst of Far Eastern affairs.

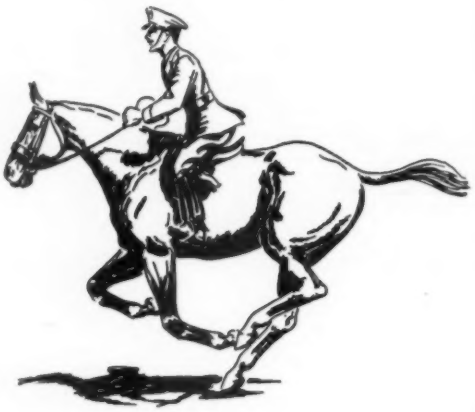
"Postmortem on Malaya" is her latest account of an Asiatic country, once dominated by a European nation and now existing under the heel of Japan. This book is primarily a study of the economic and social factors that made the Malay peninsula an unsound fruit, ready to be shaken from the British imperial tree with very little effort on the part of the Japanese.

Miss Thompson considers the military aspect of the question only as an adjunct to her broad social study, and devotes but one chapter to the military history of the peninsula. She does not subscribe to the theory that "whiskey-swilling" planters were the cause of Malaya's lack of military and psychological preparation for war. She believes that "short-sightedness and gross negligence" are the charges that can more fairly be leveled at the British community and the colonial authorities.

Socially, Malaya was a melting-pot whose ingredients did not melt. A large and transient immigrant population, composed mainly of Chinese and Indians, was necessary to do the manual labor involved in exploiting Malaya's tremendous natural resources of tin and rubber. The heterogeneity of the population made a sound and stable community very difficult to create.--L. B. C.

NEW SHIPMENT

RIDING *AND* SCHOOLING HORSES



. . . General Chamberlin's much sought after book on horsemanship. English edition. Well illustrated. Stock on hand.

$4.50

Also on hand a few copies of
TRAINING HUNTERS, JUMPERS AND HACKS,

$4.50

(American edition of this book sold for $10.00)

The Cavalry Journal

1719 K Street, N.W. Washington, D. C.

BEHIND THE JAPANESE MASK. By Jesse F. Steiner. Macmillan. $2.00.

Dr. Steiner taught English in North Japan College from 1905 to 1912. He traveled widely over the island both during that period and later when he revisited it in 1935 to study social conditions. He has written a cold estimate of the nature of the Japanese as he has interpreted it from racial customs and personal contacts studied from the viewpoint of the trained sociologist. There is no propaganda here, but a simple problem in addition.

We are reminded that for too many years we have looked scornfully at the Japanese, while they wisely absorbed all that we could teach them. Superficial western knowledge, based on a foundation of semi-barbarism, has produced a wily and vicious enemy. A thorough understanding of the nature of this opponent can be of inestimable value.

One book alone, however, cannot be expected to complete the job of building this understanding. In *Report from Tokyo,* Ambassador Grew gave us the Japanese nature and mind as seen by a statesman. In *Behind the Japanese Mask,* Dr. Steiner goes more deeply into the broad expanse of a people at large—the people with whom we are engaged in battle.

* * *

I SERVED ON BATAAN. By Lieutenant Juanita Redmond, ANC. J. B. Lippincott Co. $1.75.

Here, in 167 pages, is a story that defies reviewing. It is not a great piece of literature. It has no outstanding character. Despite its obvious defects, however, this book engenders a profound respect for those who endured the siege of Bataan and then repeated their experience in the siege of Corregidor.

To face the unknown is bad enough, but to face the known horrors of slow starvation and depleted drug supplies takes more than average courage. One sentence tells the story: "There was no retreat from Corregidor."

This South Carolina girl has not tried to glorify her profession. It would be impossible, however, to describe the work of the medical units in the Philippines without commanding respect and admiration, not only for their courage, but for their ingenuity and skill.

* * *

GOING TO OFFICER CANDIDATE SCHOOL! Edited by Major Nelson A. Voorhees, W. O. Martin Goldenring, and Officer Candidate Tino Suarez. Military Service. $1.00.

Here is a comprehensive guide for men considering Officer Candidate School. It answers the questions of most importance to the candidate: What are the requirements? How do you make application? Who fails and why? It outlines the schools and programs of instruction in order that the prospective candidate may have the knowledge on which to base a thoughtful choice.

Unquestionably, this book should be a part of every library and should be available to every man who wishes to be considered for officer's training.

SOUTH OF THE CONGO. By Selwyn James. Random House. $3.00.

At a time when American attention is centered on Africa, this book is of more than timely interest. Most Americans are moderately familiar with the northern part of that continent, but not since the Boer War has much attention been given to the section "South of the Congo."

Selwyn James has gathered his material at first hand and carried his events up to the end of 1942. This adds considerably to the importance of a book that outlines political situations and trends, in a section of the world where conflicts have always existed, not only between native and colonial populations, but between the various groups of European settlers and, in turn, between their religious and political subdivisions. Offering, as it does, such fertile ground for religious and racial antagonism among the people, the situation is one to delight the Fascist propagandist.

This book is definitely recommended reading for those who wish to understand what lies to the south of our armies in Africa, what the Germans in Africa are like, what the Nazis have succeeded in doing among them, wherein their plots have failed, and the present alignment of forces in the Belgian Congo, Tanganyika, the Rhodesias and the British protectorates.

* * *

VICHY, Two Years of Deception. By Leon Marchal. Macmillan. $2.50.

Leon Marchal is one of those Frenchmen who collaborated with Vichy for as long as he thought that course to the best interest of France. After Laval's return to power in April, 1942, however, he resigned from the Vichy embassy in Washington and joined the staff of General de Gaulle's Fighting French.

Vichy is a recounting of the actions of the French government from the time of the armistice signed in Compeigne Forest to the landing of the Americans in North Africa. Chapters given to Petain, Laval, Darlan, and Weygand, include their political lives and aspirations. The whole book is unquestionably colored by the fact that the author fought in the last war, saw Hitlerism at close quarters in Munich in 1934, and had ample opportunity to watch the absorption of power by the henchmen of the Nazi regime in conquered France.

To those who believe that Vichy is not only the tool of Hitler, but a willing ally, this book will bring ample justification.

* * *

DRESS REHEARSAL. By Quentin Reynolds. Random House. $2.00.

This reporter's story of what he saw at Dieppe is the center of a racy picture of many phases of the present war. It is clear to any thoughtful person that for the present at least, material on the Dieppe raid must necessarily remain "off the record." In lieu of what he cannot tell us of the entire action, Mr. Reynolds has filled in with many personalized sketches that make the book intimate rather than impersonal reading.

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The author's defense of these personal detail elements of a big story is given in his foreword—that an eyewitness of such an event sees most closely the individuals involved. This is doubtless quite true and, incidentally, it makes interesting reading. Such writing, however, has little permanent value either from an historical or literary point of view. The reader is left with the feeling that the writer has used too much "sawdust in his bricks."

MILITARY SKI MANUAL. By Frank Harper. Military Service Publishing Co. $2.00.

The past two decades have brought skiing, as a sport, to the attention of the American public. Before the war skiing was beginning to spread beyond the limits of a few wealthy resorts. With the advent of war this sport has become an effective weapon in the far northern climates and, during the winter months, in more temperate zones.

Mr. Harper, a brilliant skier and Alpinist, trained in winter warfare in the last war, has compiled a complete manual on the subject of military skiing. Pictures and diagrams show the sportsman, amateur or professional, and how his footwork can be turned to the best possible advantage. His chapters on tactics of attack and defense include the essential features of rations, equipment and bivouac in the snow.

Several chapters illustrate the actual use of ski troops in the Russo-Finnish war in 1939-40 and the Russo-German conflict in 1941-42. Early use of ski troops in 1914-18 in France, Germany, Austria and Italy is described and contrasted with ski troops in the present war.

Needless to say, this book should prove most useful to officers and men training in far northern posts.

FLYING HEALTH. By Dr. M. Martyn Kafka. Military Service Publishing Co. 248 pp. $2.00.

Dr. Kafka, former U. S. Army Air Corps flight surgeon, has compiled an up-to-date handbook for maintaining flying health. The high physical standards required for both civilian and army aviation are outlined. Sound, reasonable advice is given to enable the aviator to maintain these standards.

This is certainly one of the saner, more balanced books on health. The medical information given is known to every practitioner as fact. There is no effort to preach, no prohibition of habits normal to the average citizen, there is a very reasonable recommendation that moderation be observed.

While this book has been written primarily for airmen it should prove of equal value to all men interested in preserving their health and maintaining a high state of physical efficiency. E. S. D.

THEY CALL IT PACIFIC. By Clark Lee. Viking Press. $3.00.

This graphic account of our war in the Pacific was received too late for review in this issue. It is one of the best descriptions of the war that has appeared, and is highly recommended to our readers.

It is a comprehensive and gripping narrative told by a man who went through it.

Here Are This Months New Books of Current Interest

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Y- 3 **Defensive Warfare.** *By von Leeb.* This will be the second volume, companion to Clausewitz' *Principles of War,* in the series of Military Masterpieces. $1.00

Y- 4 **Dress Rehearsal.** *By Quentin Reynolds.* An eyewitness account of the raid at Dieppe. $2.00

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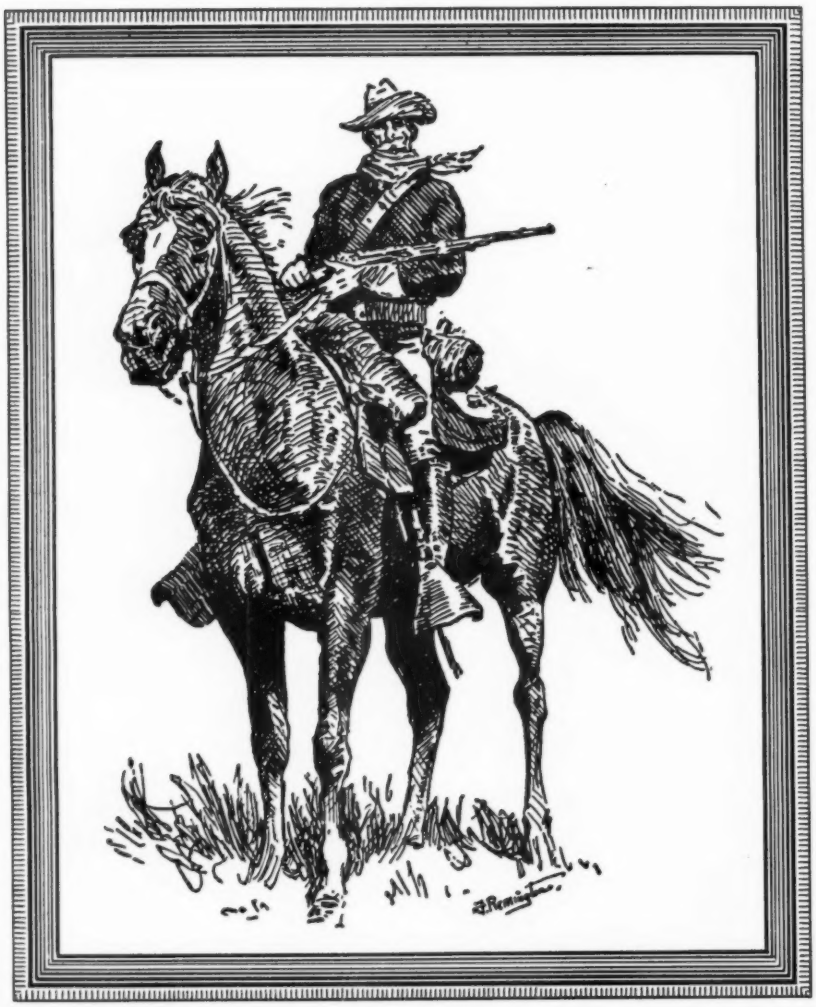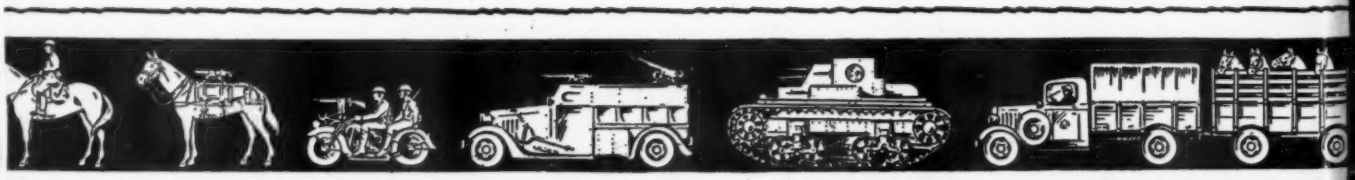
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